SPEER HANDLOADERS Manual

VOLUME
ONE

PEER PRODUCTS COMPANY . . LEWISTON, IDAHO

SPEER
HANDLOADERS
MANUAL

SPEER

SPEER PRODUCTS COMPANY
LEWISTON, IDAHO
1954

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Lewiston, Idaho

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1st Printing, December, 1954
2nd Printing, February, 1955
3rd Printing, July, 1955
4th Printing, March, 1957

Printed in the United States of America
LAWTON PRINTING, INC.
Spokane, Washington

CONTENTS

PAGE

INTRODUCTION TO HANDLOADING 6

CARTRIDGE COMPONENTS 9
Cases, Primers, Smokeless Powders, Bullets

HANDLOADING TOOLS 19
Presses, Dies, Powder Scales, Powder Measures, Case Trimmers, Bullet Pullers, Decapping Tools, Miscellaneous Tools

MECHANICS OF HANDLOADING 32
Case Inspection, Sizing and Priming, Powder Handling, Bullet Seating and Crimping

SELECTION OF LOADS 39
Loading for Accuracy, Big Game, Velocity

PRESSURES AND HOW TO DETECT THEM 43

BALLISTIC PROPERTIES OF BULLETS 53
Sectional Density, Ballistic Coefficient, Bullet Energy Tables.

LOADING DATA 57
.22 Hornet 57
.218 Bee 59
.222 Remington 61
.219 Zipper 63
.219 Donaldson Wasp 65
.219 Improved Zipper 67

PAGE
.22-250 Varminter 69
.220 Swift 71
.250-3000 Savage 74
.257 Roberts 77
.25 Souper 79
.25 Neidner 82
6.5 mm Jap Arisaka 84
6.5 mm X Roberts 86
6.5 mm X 57 mm 86
.256 Newton 88
.270 Winchester 90
7 mm Mauser 93
.30-30 Winchester 95
.30 Remington 96
.300 Savage 97
.308 Winchester 100
.30-40 Krag 102
.30-'06 Springfield 104
.30 Short Magnum 107
.30 Newton 110
.300 H & H Magnum 112
.303 British 115
7.7 mm Jap 116
.32 Winchester Special 118
.32 Remington 118
8 mm Mauser 119
.333 O. K. H. 122
.333 Express 123
.348 Winchester 124
.35 Remington 126
.35 Whelen 128
.35 Newton 130
.375 H & H Magnum 132

ACKNOWLEDGMENTS

In the preparation of the Speer Handloaders Manual many individuals and organizations have co-operated. We extend to them our sincere appreciation for their valuable and generous assistance in providing arms, equipment and technical advice.

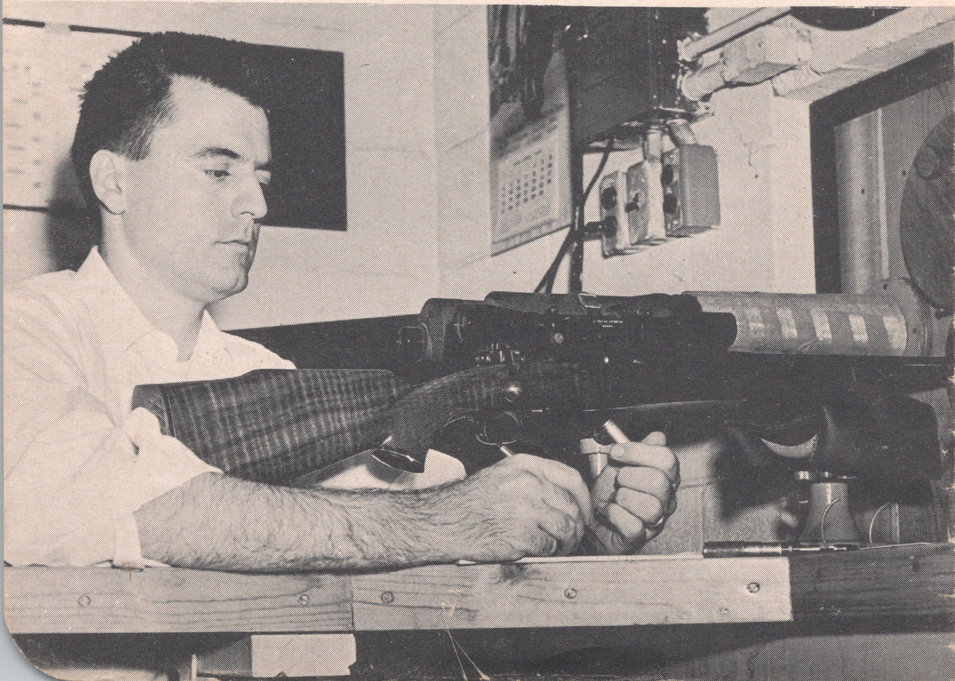
We wish to acknowledge a particular debt of gratitude to Jack O'Connor, author of many books and articles on arms and ammunition and shooting editor of Outdoor Life Magazine who consistently gave of his time and expert knowledge and took a sincere interest in the preparation of this manual.

For their invaluable aid in furnishing arms, equipment and technical information, we wish to thank the following firms and individuals: Spokane Sporting Goods Company, Luft Brothers, Russ Leonard and Thos. Burgess of Spokane, Washington; and Ronald K. King, Harold Higbee, "Mac" Riggers of Lewiston, Idaho.

Founded by Paul Revere 1801
POWER PRESS HANDBOOK

VERNON D. SPEER

RAYMOND G. SPEER



INTRODUCTION

Ever since SPEER BULLETS were introduced to shooters more than ten years ago, it has been our desire to publish a manual giving handloading instructions and loading data for rifle cartridges. The handloading instructions, to the best of our knowledge, represent the collective recommendations and opinions of many authorities and handloaders. We have consolidated much information that is common knowledge among the handloading fraternity. Some of it has been previously published and the rest accepted although unpublished. We believe what we are presenting here will give any interested individual a fundamental working knowledge of handloading. Experienced handloaders will find useful bits of information here and there which will give them a more complete knowledge of this vast subject.

Well over half of this manual is devoted to descriptions and loading data for many standard and wildcat rifle cartridges. To provide accurate reliable data, we installed our own ballistics laboratory utilizing the latest in electronic velocity measuring equipment. The firing of many thousands of loads over a period of nearly three years was necessary to complete the data shown. The figures are listed primarily to show the velocity that can be expected from a given cartridge when loaded with a given powder charge and bullet. The loads listed are not necessarily *recommended* loads because an excellent load in one rifle might be unsatisfactory and perhaps even unsafe in another rifle. Under average conditions, most rifles should give velocities consistant with the corresponding loads.

We firmly believe the information on the following pages will prove useful to every shooter, regardless of his handloading experience, and that it will be recognized and accepted as a "*handloader's manual*".

VERNON D. SPEER
RAYMOND G. SPEER

INTRODUCTION TO HANDLOADING

One of the fastest growing hobbies of recent years is the handloading of metallic rifle cartridges. Shooters have turned to handloading because of the economies afforded and because of the outstanding performance they can obtain with their rifle by handloading. It is possible to save nearly two-thirds on the cost of ammunition, develop ammunition having superior accuracy and performance and enjoy a very interesting hobby at the same time.

Reloading ammunition is an activity which will pay dividends to the hunter who uses his rifle during the hunting season only. Why should a man leave his gun in the rack for all but two weeks out of the year when if, by handloading, he can make up superior ammunition at low cost and have the fun of shooting the year around. Handloading will give him the opportunity to spend many more hours shooting his rifle, and will enable him to become more familiar with the performance of his gun, and improve his shooting eye. He would have far less doubt about getting his game come fall, at least from the standpoint of being able to place his shot where it counts. In a great many instances, the shooters who make the one shot kills are handloaders and, as a result of being handloaders, they know the capabilities of their rifles, do not have to trail wounded animals or go home empty handed because they missed the target.

Superior accuracy results from handloaded ammunition because the shooter can vary powder, powder charges, primers and bullets. By experimenting with the various combinations of these, he can develop that particular load which fits his rifle the best. For instance, a given bullet might give excellent accuracy in one rifle and very poor accuracy in another. In many instances, a change in powder charge of only one half grain will reduce the group size from two inches to one inch at 100 yards. Match accuracy not only takes a keen eye and a steady hand but also takes ammunition which will perform perfectly in the particular rifle used. It takes only a small amount of testing to find loads which will increase the accuracy of any rifle.

There is a feeling by some when they first hear about handloading that it is a dangerous practice which is attempted only by individuals not having full possession of their senses. Nothing could be further from the truth. Many substances in common use around the home offer greater potential explosion hazard than the smokeless powder used by the handloader. Present day smokeless powder must be closely confined to burn rapidly or *explode.* They are not explosive within the common understanding of this term. They are *combustibles,* burning quite rapidly when ignited. It takes relatively high temperatures for heat alone to ignite these powders. The volatile hydro-carbons such as lighter fluid, cleaning fluid, gasoline, and rubbing alcohol offer an explosion hazard much greater than that offered by powder. Although the handloader does not use black powder, it is well to mention that black powder burns or *explodes* as rapidly in the open air as it does when confined. The hazard of explosion when using black powder is much greater than that of smokeless powder.

Primers used by handloaders contain a small pellet of high explosive sensitive both to percussion and heat. The amount of explosive in each primer is so small that even if one should detonate, which is a very remote possibility, little likelihood of injury is possible. In order to avoid accidentally detonating loose or scattered primers, they should always be stored in the boxes in which they were purchased. It takes a relatively sharp blow or a high degree of heat to detonate primers. It is an extremely rare occurance for a handloader to fire a primer during the course of his handloading operations. Many handloaders have loaded many thousands of rounds without ever firing a primer. However, handloaders might take the extra precaution of wearing safety glasses to protect their eyes in the off-chance a primer might be accidentally fired.

Some handloaders have found their fire insurance policies prohibit the storage of powder and primers on their property. Should this be the case, most insurance companies will be able to furnish an endorsement on the policy which will permit the storage of a limited quantity of powder and primers. This is a very common procedure and most insurance companies will gladly do it without charge.

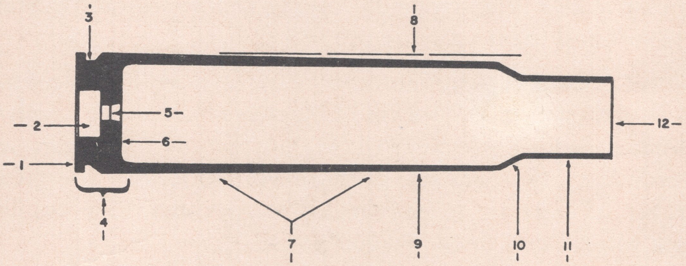
Clean and orderly housekeeping in the vicinity of the loading operations is important from the safety standpoint. It is possible to accumulate a sufficient amount of powder on the floor and work bench to cause a fire hazard. Smoking while throwing powder charges and seating bullets is not recommended and could cause a serious fire. There is no particular hazard in smoking while resizing and priming.

Procedures for reloading metallic cartridges are discussed thoroughly in this handbook and if the beginner will study these instructions and use common sense in following them he will find handloading a very fascinating hobby that is no more dangerous than woodworking or any other work shop activity. The main purpose of this handbook is to point out that handloading is simple and easy to do. Experience and knowledge of firearms are not prerequisite. Handloading is by all means essential in acquiring an interest and practical knowledge of ballistics of your rifle.

CARTRIDGE COMPONENTS

CARTRIDGE CASE

The cartridge case may be generally described as a container for the primer, the propellent charge of powder, and the projectile or bullet. It is the main body into which the components are placed resulting in a unit of ammunition whch can be loaded, fired and ejected from the breech of the rifle. When a cartridge is fired in a rifle, the case acts as a seal to prevent the escape of gases from the breach.



Cartridge Case Nomenclature

1. Rim
2. Primer Pocket
3. Extraction Groove
4. Head
5. Flash Hole
6. Web
7. Body
8. Body Taper
9. Sidewalls
10. Shoulder
11. Neck
12. Mouth

Center fire rifle cartridge cases are made from brass, 70 per cent copper and 30 per cent zinc, called cartridge brass. Cartridge brass differs from other brasses in that it has physical properties which make it well adapted to deep drawing, essential in the manufacture of cartridge cases. In the beginning, brass sheet is fed into a double acting press which punches out a disc and forms it into a cup at the same time. These cups are fed into a draw press which thins the side walls and elongates the cup. The cups are given successive draws until the desired length is reached. After drawing, the cases are put through a heading machine. which forms the head and primer pocket. The mouth and shoulder of the case is then formed according to the design of the particular case being made. The head must then be turned to proper dimension and an extraction groove cut (if required) in an automatic lathe. The flash hole is generally pierced during the priming operation in a pierce-prime machine. Cases are annealed, pickled and washed several times during manufacture. The case is also heat tempered leaving the mouth and sidewalls fairly soft and the head quite tough and hard.

Most present day high intensity cartridges such as the .30-06, .270 Winchester and .300 H & H Magnum have heads which will withstand loading pressures of 55,000 pounds per square inch. Consecutive loadings at this pressure will reduce case life greatly, however. If cases are to be reloaded many times, they should be loaded to pressures under 50,000 pounds.

Headspace is a term of vital concern to the rifleman and especially to the handloader. Headspace may be simply defined as "the lengthwise end-play a cartridge has in the closed chamber of a rifle". When headspace is excessive, the cartridge case may rupture with almost certain damage to the rifle and possible injury to the shooter. Insufficient headspace will cause the bolt to close with difficulty, if at all. If the bolt can be closed, even with considerable effort, there is no particular danger in firing a rifle with insufficient headspace.

Rifle chamber headspace is measured with a hardened and accurately ground steel gage. The gage resembles a steel replica of a cartridge case but without the neck portion. A *minimum* or *go* gage is the shortest gage upon which the bolt of the rifle can close without effort. A *maximum* or *no go* gage is one upon which the bolt will not close without effort. A chamber that is within these dimension limits will safely fire cartridges of standard dimensions.

The difference in length between the minimum and maximum gages is .006" in most calibers. New loaded ammunition as well as new unfired cartridge cases can usually be depended upon to be of correct dimensions to fit standard chambers.

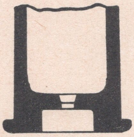
In reloading cartridge cases that have been fired, it is possible by mis-adjustment of the loading press and dies, to change the dimensions of cartridge cases so that they will not correctly headspace in the rifle. In the matter of headspace, the cartridge case dimensions are every bit as important as the rifle chamber dimensions.

Several makers of tools for the handloader produce very fine gages for checking cartridge cases. These gages not only enable the user to determine precisely that the case is within permissible limits of headspace but also to check overall length, neck length, body size and neck size. This gage, while not essential, is a very desirable addition to the handloader's equipment. With it, all guesswork regarding cartridge case dimensions is eliminated.

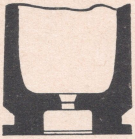
If the bolt closes with effort on a reloaded cartridge, either the neck is too long and is *bottoming* in the neck portion of the chamber or the body of the case is too long resulting in insufficient headspace. The first condition can be corrected by trimming the neck back to the correct length and the second by pressing the case slightly deeper into the sizing die.

Excess headspace may be checked by first stripping the bolt of the rifle and then chambering the cartridge; then add shims between the bolt face and the cartridge case head until a slight resistance is felt when closing the bolt. Measured with a micrometer, the total thickness of shims used determines the headspace. If the headspace exceeds .010", either the cases are too short or the chamber is too long. The trouble can be pinpointed by checking the rifle with headspace gages and the cases with the case gage and necessary corrections made.

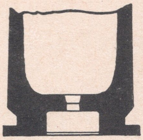
Maximum accuracy is obtained with headspace on the minimum side.



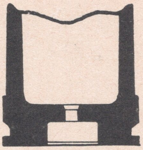
Rimmed



Rimless



Semi-rimmed



Belted

Rifle cartridge cases are divided into types according to the head design. Most early cartridges were of the rimmed design and there are a great many rimmed cartridges in common use today such as the .30-30 Winchester. Headspace is governed by the rim.

The semi-rimmed case differs from the rimmed case in that it has a slightly smaller head diameter in relation to the case body than the rimmed design. The semi-rimmed case also has an extraction groove cut under the rim. The .220 Swift cartridge is the only semi-rimmed case in commercial production in this country. Headspace is controlled by head to shoulder length.

The rimless case is in very common use because it is well adapted to bolt action rifle magazines, although the semi-rimmed case will also function satisfactorily through this type magazine. The head of the case is approximately the same diameter as the largest portion of the case body. An extraction groove is cut into the head leaving approximately one-sixteenth inch as a rim. The .30-'06 U. S. Government cartridge is a typical rimless case. Headspace is controlled by head to shoulder length.

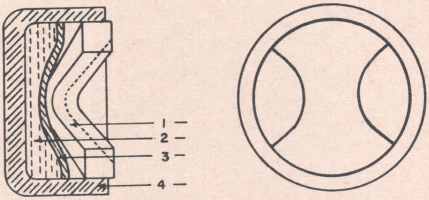
The belted case is the type of case used for the .300 H & H Magnum cartridge and other magnums. The belted case is like the rimless case with the head approximately .010" larger than the case body adjacent to it. This larger portion is called a belt and extends about .220" from the face of the head. An extraction groove is cut into the belt leaving .050" for a rim. Chambers for belted cartridges have a recess to accomodate the belt. When the cartridge is seated, the belt and recess determine headspace.

When a loaded brass cartridge is fired in a rifle ,the internal gas pressure expands it tightly against the chamber walls of the rifle. If the brass in the case is too soft, it will not spring back from the chamber walls making extraction very difficult. If the brass in the case is tempered to the correct hardness it will spring back part way to its original dimensions making the case easy to extract. If the brass is too hard, the case will be brittle causing it to crack rather than expand and spring back. Obviously, the manufacture of brass cartridge cases is a very technical and complex business. It would be impossible for any individual or small shop to manufacture satisfactory brass cartridge cases because they would not have the technical knowledge, correct tools and tool design, metalurgical testing facilities nor the production experience necessary.

PRIMERS

There are two kinds of center fire primers. They are the Boxer primer, used in the United States, and the Berdan primer used almost exclusively in Europe. The Boxer primer, or separate anvil primer, differs from the European primer in that it has a small metal anvil within the primer which backs up the priming charge when the firing pin of a rifle strikes it. The European Berdan primer has no anvil in it, but instead, uses a projection in the primer pocket of the case for an anvil. From a purely functional standpoint, the Berdan and Boxer type primers are equally efficient. The Boxer primer is much easier to remove from the fired case and is therefore much preferred by the handloader.

Typical American (Boxer) Primer



1. Anvil
2. Pellet (Charge)
3. Paper Disc
4. Cup

All American primers available to handloaders and used in commercial ammunition are charged with a non-corrosive, non-mercuric priming compound. Although this type primer is being used in U. S. Government .30-'06 ammunition now, most of this ammunition available to handloaders has been primed with the corrosive FA70 primers. The use of this ammunition necessitates thorough cleaning of the rifle. Also, because of the corrosive residue left in the cases, they should be washed thoroughly after being fired. Otherwise this corrosive residue may cause pitting of the rifle barrel.

The Boxer type primers are manufactured in three different sizes. Each size is loaded with different amounts and kinds of priming mixture in order to give proper ignition for the type of cartridge and powder used. Two sizes of primers used are the .175 inch for the small rifle and pistol cartridges, and the .210 inch for large rifle and pistol cartridges. Some .45 caliber pistol cartridges of Government Arsenal manufacture used a primer having a diameter of .204" but it is reported that all production since 1946 uses the .210 diameter. All .45 pistol cartridge cases of commercial manufacture have always used the .210 diameter primer.

Primers made for use in pistol and revolver cartridges use thinner metal in the primer cups and smaller explosive pellet charges than primers made for use in rifle cartridges. The hammers and strikers of revolvers and pistols strike with less energy than those of rifles thus requiring a primer that is sensitive to the lighter blow. All United States primers of a given diameter should fit all cartridge cases with that diameter of primer pocket. Interchangeability between different manufacturer's primers and cases is not perfect but for normal use the results are quite satisfactory.

American center fire rifle primers consist of a small brass cup, the priming charge, a shellaced paper disc and the anvil all assembled into the complete primer. In the manufacture of rifle primers, the cup and anvil are first stamped from sheet brass. The cups and anvils are then washed and dried and are ready for the assembling operation. In assembling the primers, they are first placed open end up in a steel plate which has recesses for them.

The correct priming mix is then prepared, about the consistency of wet patching cement, and made into pellets by scraping this wet priming mix across a plate which has holes in it which correspond to the location of the primer cups in the other plate. The plate containing the pellets is placed over the plate containing the cups and a series of punches press the pellets into the cups. The plate containing the primed cups is then placed in a press which automatically punches out the shellaced paper disc and places it on top of the pellet in the cup. The anvils, located in holes on another corresponding steel plate, are then pressed into the primers on top of the paper disc. The final operation in the manufacture of primers is to place them in a drying oven which removes the moisture and thus makes them sensitive.

POWDERS

Gun powder to the average shooter is probably the most foreign of the cartridge components unless he happens to be an experienced handloader. The number designating the various powders used in handloading are completely without meaning to the average shooter. These numbers however, being the method used to identify the various types of powder, make it essential that the handloader know them. The following is a list and description of most of the rifle powders used today.

Hercules No. 2400 is a very fine grained, dense type, quick burning double base powder containing about 15% nitroglycerine. It is used a great deal in reloading pistol cartridges, however it was originally brought out for use in the .22 Hornet and the .25-20, in which it will give excellent performance. It can also be used for reduced loads in the .30-'06 and other large cartridges.

Dupont Sr. No. 4759 is a large grain powder designed for reduced loads in center fire cartridges. It can also be used for heavier loads in the smaller capacity cases such as the .219 Zipper.

Dupont Imr No. 4227, a dense progressive burning powder designed for small capacity cases such as the Hornet. It is also used for accurate reduced loads in larger capacity cases.

Dupont Imr No. 4198 is another dense fairly fast burning powder but not quite so fast burning as No. 4227. It will give excellent performance in the .222 Remington cartridge and with the lighter bullets in the medium sized cases such as the .300 Savage, .32 Winchester Special, .308 Winchester, etc.

Dupont Imr No. 3031 is a single base powder of medium burning rate. It is a very flexible powder adapting itself to a wide range of case sizes but being most effective in medium size cases. It will give excellent results with lighter bullets in most bottleneck cartridges. It is also satisfactory for heavier bullets in the larger cases but the velocities cannot be obtained with this powder that are possible with the slower burning powders.

Hercules Hi Vel No. 2 is a dense double base powder containing about 15% nitro-glycerine. It is a good powder for most sporting rifle cartridges, although it should not be used for high velocity loads because it is more errosive than single base powders.

Rifle Powder No. 4676 is a single base powder of medium slow burning rate which is reputed to be more accurate than some of the other powders. It is one of the surplus powders available from B. E. Hodgdon, Merriam, Kansas. It can be used in most of the average sporting rifle cartridges with medium weight bullets. It is a very popular powder and is loaded in everything from the .220 Swift on up to the .375 H & H Magnum.

Dupont Imr No. 4064 is a medium slow burning single base powder. It is probably the most popular smokeless powder used by handloaders today. The reason for this is that it can be loaded effectively in most all popular cartridges. Good results may be obtained with most any weight bullets in a given cartridge. It is most efficient however with medium and light weight bullets in most cartridges such as the 150 grain bullet in the .30-'06 Springfield.

Dupont Imr No. 4320 is another medium slow burning powder effectively used with all but the heaviest jacketed bullets in the medium and large size cartridges. This powder will give good accuracy in many cartridges with lighter bullets but in some cases will give erratic results with heavier bullets.

Dupont Imr No. 4350 is the slowest of the series of Du Pont rifle powders. This powder has become more popular recently because of the trend toward the large magnum type cartridges. It will give higher velocities with heavier bullets than it is possible to obtain with the faster burning powders and still stay within safe pressure limits.

RIFLE POWDER NO. 4831 or "4350 data" is an Army surplus powder recovered from 20 millimeter cases and is available from B. E. Hodgdon at Merriam, Kansas. This is slower burning powder than Du Pont 4350 which makes it very good for heavy bullets in the large capacity cases. The same velocities may be obtained from this powder as can be obtained with 4350, but for given velocities the pressures using this powder will be lower. Although many handloaders are trying to stay away from surplus powder, it should be pointed out that this powder is actually safer than any of the others. Only in larger cases can enough be put in the case, even with heavy bullets, to result in dangerous breech pressures.

POWDER NO. 4895 is another surplus powder of a medium slow burning rate. There were several different lots of this powder available to handloaders after World War II. Each different lot would produce different pressures when used under the same conditions and care had to be taken in using it. This condition has been corrected in that the distributor of the powder, B. E. Hodgon, Merriam, Kansas, has announced that all shipments of this powder since 1952 are from a blended lot. It is recommended however, that handloaders using this powder work up their loads carefully so that there is no danger of excessive pressures.

BULLETS

IN ORDER to obtain the performance expected of present day sporting rifle cartridges, it is essential that handloaders use jacketed bullets. Present day jacketed bullets consist of drawn gilding metal jackets in which a lead core is inserted and is swaged to shape in a steel die. Jacket metal hardness and lead hardness are varied depending upon the type of bullet being made. Bullets to be used in low velocity cartridges are constructed differently than those to be used in high velocity cartridges. Like cartridge cases, bullets are a carefully designed precision made product.

The jackets for SPEER BULLETS are made from an alloy of 95% copper and 5% zinc which is called gilding metal. It is alloyed and rolled to exacting specifications in the country's largest brass mills and delivered to the bullet plant in strip form. This strip is sent through a press which blanks and draws the cup in one operation. These cups are then washed and dried to remove the lubricant used in stamping them as well as any dirt they might have picked up. They are then passed through a number of drawing operations which reduce the diameter and increase the length of the cup at the same time. These deep drawing operations leave the mouth of the jacket uneven, therefore the bullet jackets are drawn longer than necessary and the excess is trimmed off. After trimming, the jackets are then ready for the lead core which is formed from lead wire and then tamped into the jacket. The cored jackets are in turn swaged in steel dies in an automatic press to the desired shape and size.

HANDLOADING TOOLS

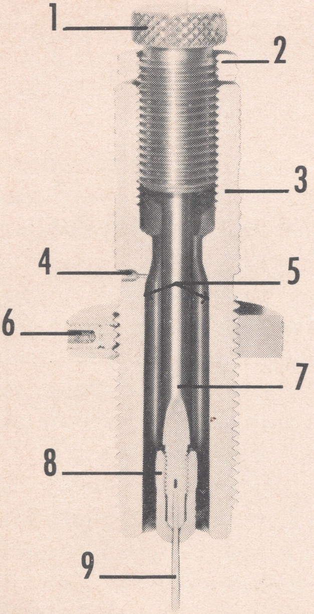
So far we have discussed handloading in general and described the components of the complete cartridge and how they are made. Before any interested shooter can begin handloading, he must have a few basic tools to work with. We do not mean to say that in order to begin handloading you must invest a great deal of money in equipment. On the contrary, many resourceful shooters have fashioned their own handloading tools from nothing more than junk yard parts. The average shooter, however, would probably not care to make his own tools in view of the relatively low cost of handloading tools now on the market.

A favorite beginner's tool for many years has been the Lyman *nutcracker* or tong tool. In view of its low cost and the fact that one can load almost any cartridge with it, many millions of them have been sold. It is a hand operated tool but will nevertheless do an excellent job of reloading. This tool along with the economically priced Pacific powder scale, a powder funnel and the cartridge components is all that is necessary for the shooter to begin handloading.

Many handloaders, after they have become familiar with loading technique and perhaps acquire two or three rifles, find they would like to have a bench type loading tool and other accessories to increase their loading efficiency. Bench type tools are necessary for full length resizing of cases and for reducing cases in case forming. The dies used in bench loading tools are constructed differently than those used in hand operated tools, thereby combining several operations for faster reloading.

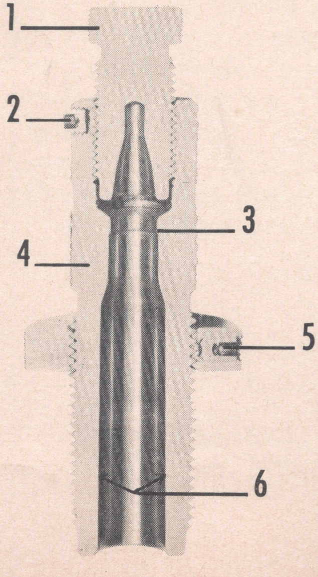
The following pages show many of the popular loading tools manufactured for handloaders along with many accessories which the more advanced handloaders find desirable.

RIFLE LOADING DIES



TYPICAL FULL-LENGTH RESIZING DIE

1. Decapping Rod Adjustment Knob
2. Lock Ring
3. Die Body
4. Vent Hole
5. Resizing Chamber Reamed and Polished to Case Dimensions
6. Lock Ring
7. Decapping Rod
8. Expanding Plug
9. Decapping Pin



TYPICAL BULLET SEATING DIE

1. Seating Depth Adjustment Knob
2. Set Screw
3. Case Mouth Crimper
4. Die Body
5. Lock Ring
6. Seating Chamber

LOADING TOOL MANUFACTURERS

Below are the names and addresses of the manufacturers of the loading tools shown on the preceeding pages. Although there are many more quality tools available, they are not shown or listed because of limited space.

Lyman Gun Sight Corp.
Midlefield, Conn.

W. Rohrbacher
(Yankee Tools)
513 Sanford Place
Erie, Pennsylvania

The Multiplex Company
P. O. Box 283
Logan, Ohio

Hollywood Gun Shop
6116 Hollywood Boulevard
Hollywood 28, California

Pacific Gun Sight Co.
2901 El Camino Real
Palo Alto, California

R. C. B. S. Gun & Die Shop
1365 7th Avenue
Oroville, California

C-H Die Company
3482 East Union Pacific Ave.
Los Angeles 23, California

Charles C. Johnson
(Red Head Tools)
Route 3
Springfield, Ohio

Santa Anita Engineering Co.
(Saeco)
2435 E. Colorado Street
Pasadena 8, California

Grigsby Engineering Co.
125 West Avenue 29
Los Angeles 31, California

Aurand's (P & O)
229 E. Third Street
Lewistown, Pennsylvania

Potter Engineering Co.
1387 River Hills Circle
Jacksonville, Florida

The Redding Company
P. O. Box 524
Cortland, New York

Dunbar Glass Corp.
Dunbar, West Virginia

L. E. Wilson
Box 636
Cashmere, Washington

W. S. Vickerman
208 South Ruby Street
Ellensburg, Washington

Guns
P. O. Box 8333
Houston, Texas

G. T. Smiley Co.
Clipper Gap, California
Box 54

Belding & Mull
P. O. Box 428
Philipsburg, Pa.

MECHANICS OF HANDLOADING

SETTING UP

Select a Place for handloading with good light and adequate storage room for tools and supplies. A small drawer cabinet will be very handy for cases, dies, primers, bullets, etc. A solid heavy table or work bench is a necessity for the handloader, especially if a heavy duty bench type loading press is to be used. It would also be an advantage if the bench is attached to the floor for added rigidity.

The following is a list of tools and supplies useful to handloaders.

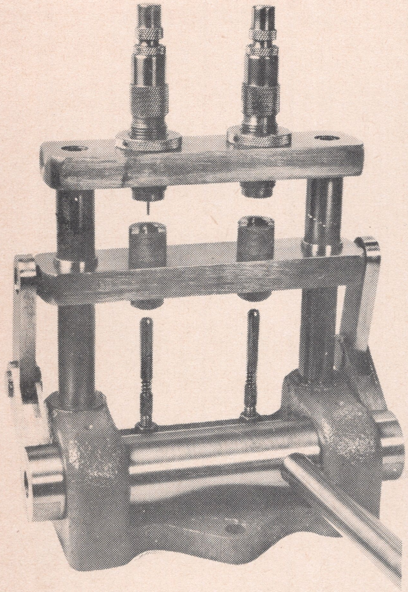
Required
- Loading Press
- Resizing Die
- Bullet Seating Die
- Powder Scale
- Powder Funnel
- Bullets
- Smokeless Powder
- Primers
- Case Lubricant
- Case Mouth Chamfering Reamer

Extras
- Powder Measure
- Primer Pocket Reamer
- Case Trimmer
- Bullet Puller
- Case Gage
- Case Neck Reamer

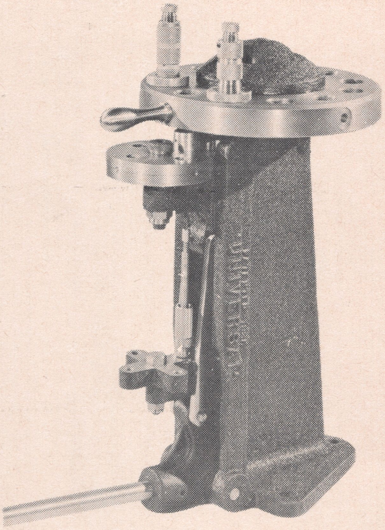
STEP ONE — CASE INSPECTION

Generally speaking, there are five things to look for in case inspection. They are: (1) Neck Split; (2) Body Split; (3) Body-head Separation; (4) Swelled Head and Primer Pocket; and (5) Excessive bulge.

LOADING TOOLS

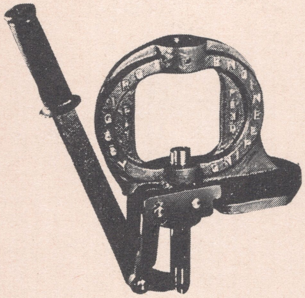


DUNBAR

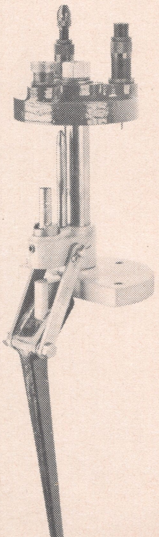


HOLLYWOOD UNIVERSAL

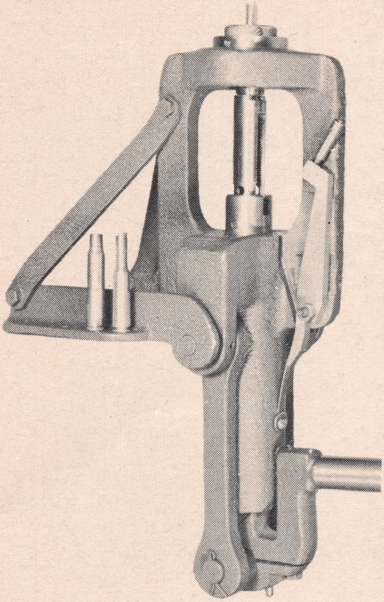
GRIGSBY



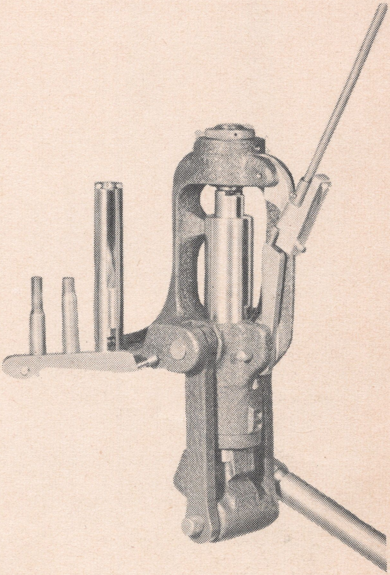
RED HEAD



LOADING TOOLS

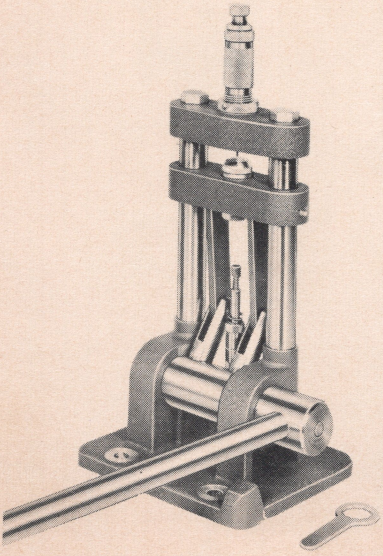


R. C. B. S.

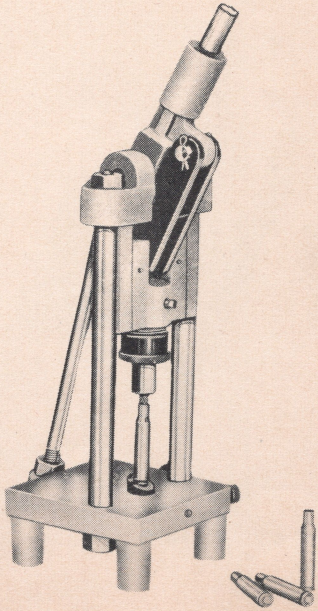


R. C. B. S. MODEL B

C-H



LYMAN TRU-LINE SR.



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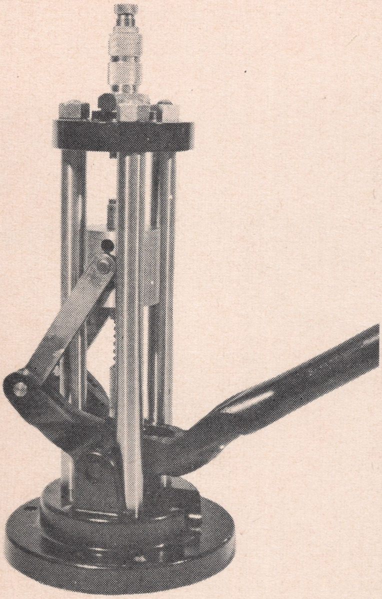
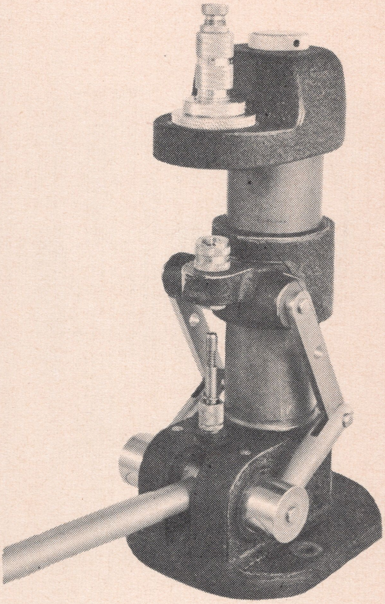
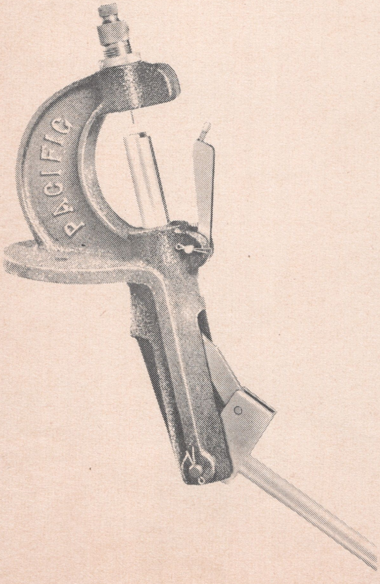


HOLLYWOOD JR.

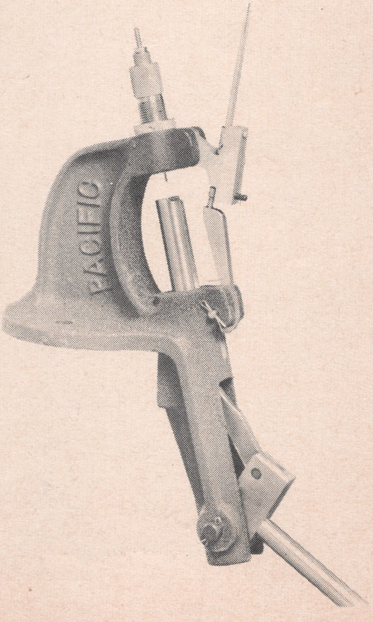


HOLLYWOOD SR.

PACIFIC STANDARD



PACIFIC SUPER



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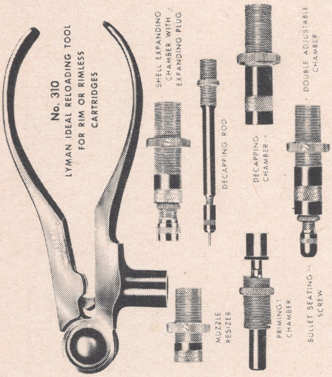
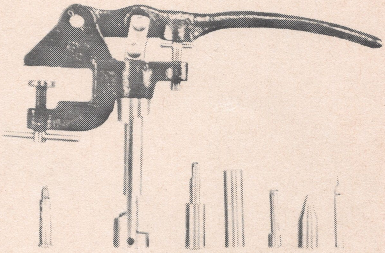
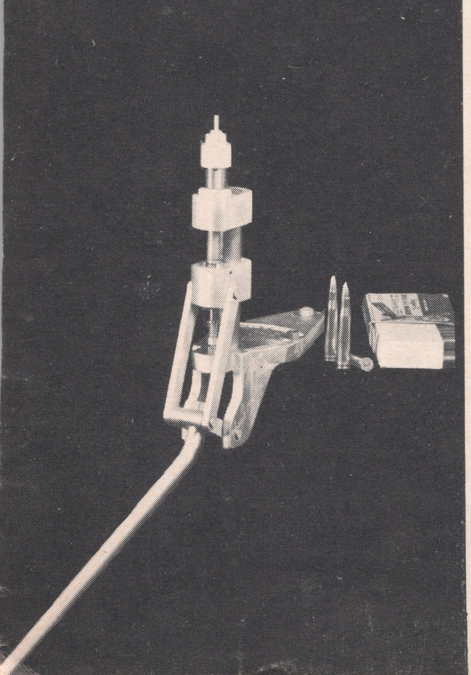

No. 310
LYMAN IDEAL RELOADING TOOL
FOR RIM OR RIMLESS
CARTRIDGES
SHELL EXPANDING CHAMBER WITH EXPANDING PLUG
DECAPPING ROD
DECAPPING CHAMBER
DOUBLE ADJUSTABLE CHAMBER
MUZZLE RESIZER
PRIMING CHAMBER
BULLET SEATING SCREW

LYMAN NO. 310

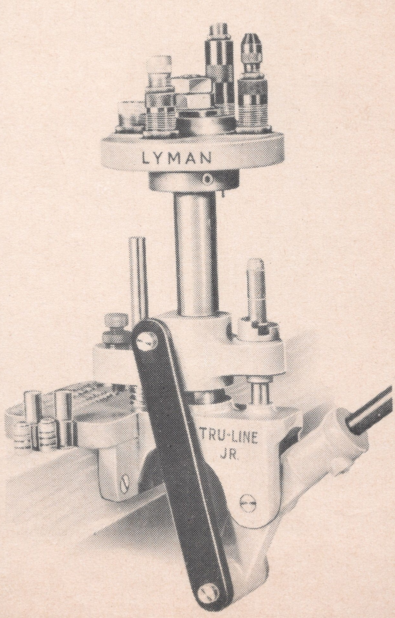


YANKEE MODEL C

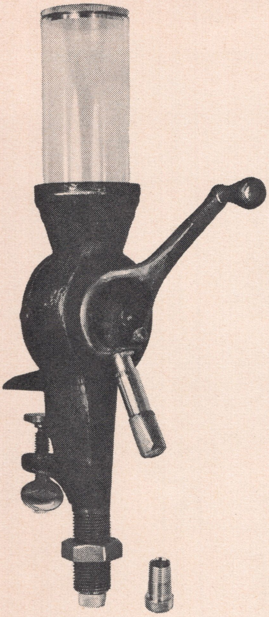
MULTIPLEX



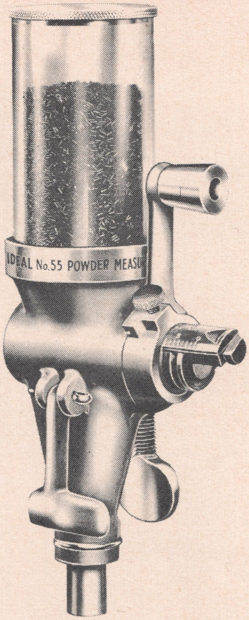
LYMAN TRU-LINE JR.


LYMAN
TRU-LINE
JR.

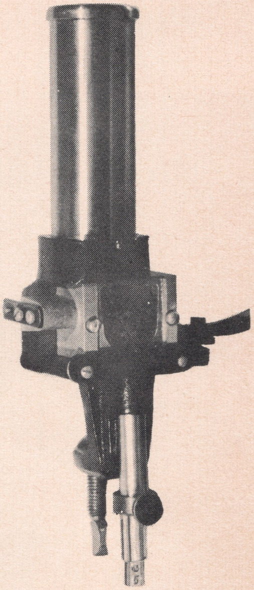
POWDER MEASURES



HOLLYWOOD

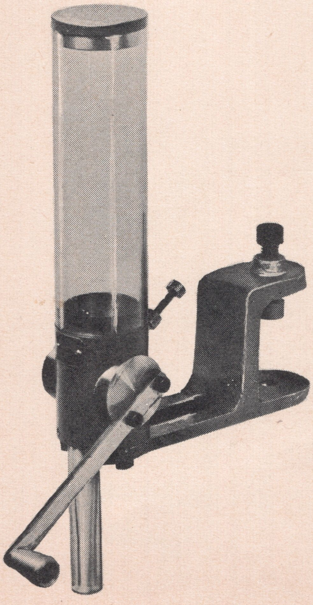

IDEAL No.55 POWDER MEASURE

LYMAN

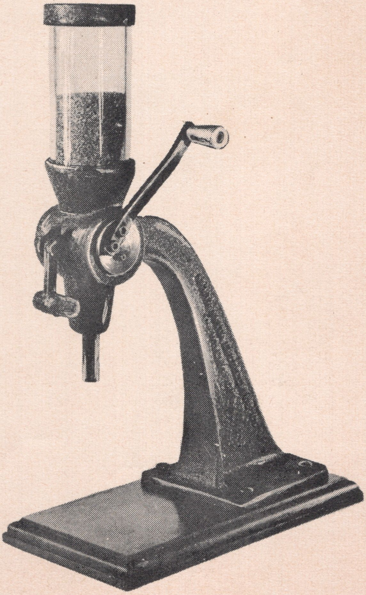


BELDING & MULL

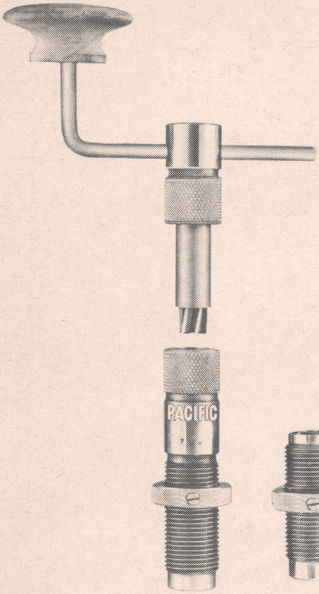
DUNBAR



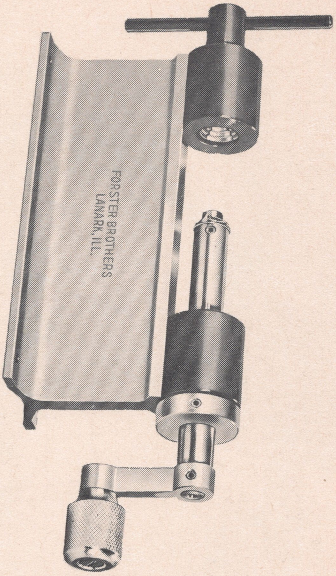
SAECO



CASE TRIMMERS

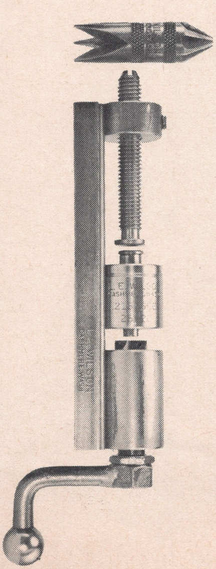


PACIFIC

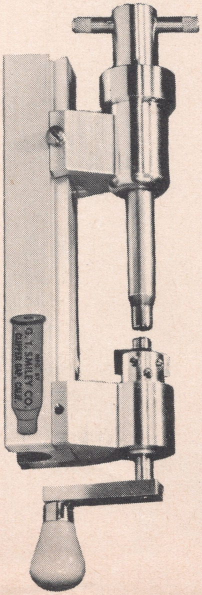

FORSTER BROTHERS
LANARK, ILL.

FORSTER

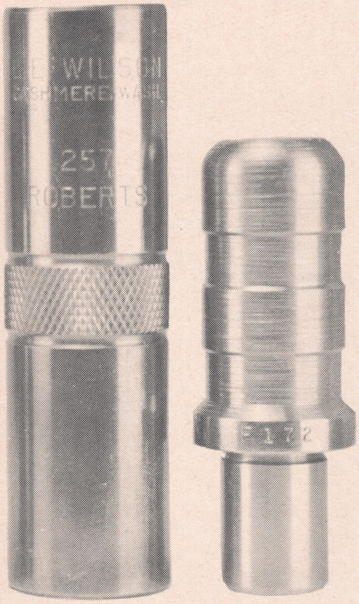
WILSON



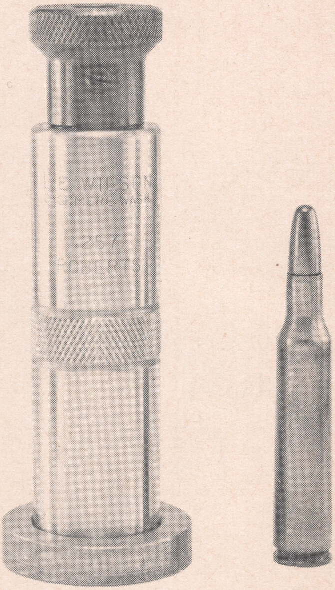
SMILEY


G. T. SMILEY CO.

MISCELLANEOUS TOOLS

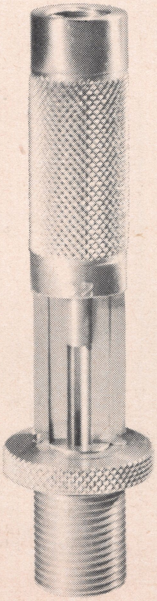

L.E. WILSON
CASHMERE, WASH.
.257
ROBERTS

WILSON FULL-LENGTH RESIZING DIE

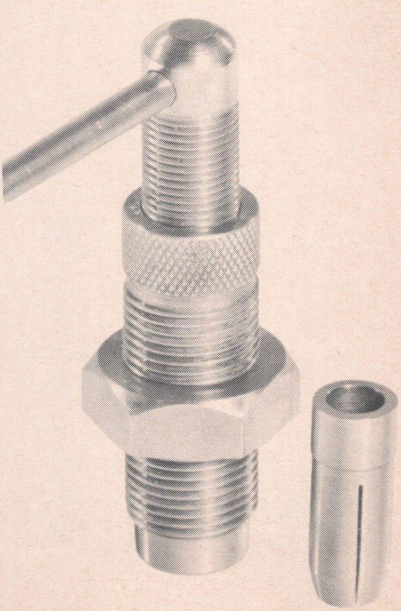

L.E. WILSON
CASHMERE, WASH.
.257
ROBERTS

WILSON BULLET SEATER

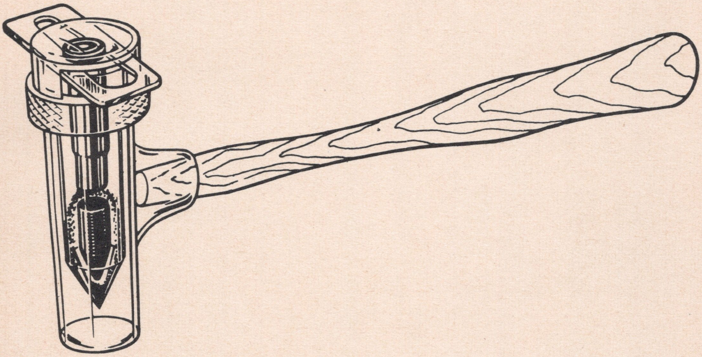
VICKERMAN UNIVERSAL BULLET SEATER



PACIFIC BULLET PULLER

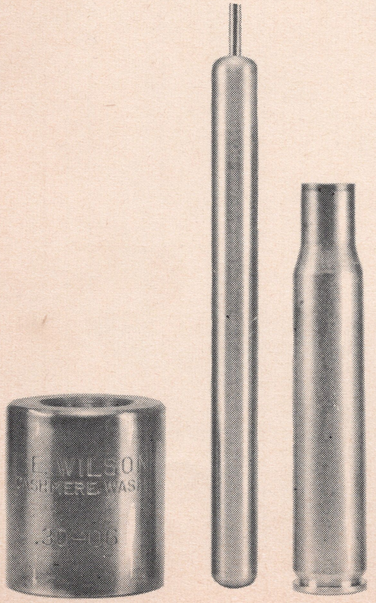


MISCELLANEOUS TOOLS

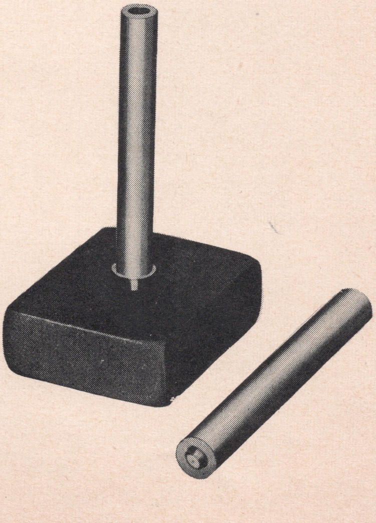


GUNS — INERTIA BULLET PULLER

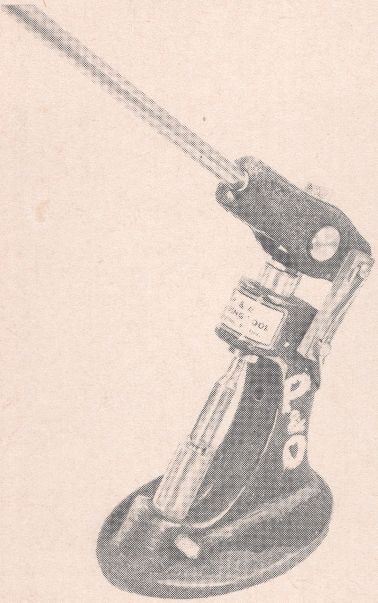
WILSON PUNCH & BASE SET
(For removing crimped-in primers from .30-'06 service cases.)


WILSON
CASHMERE WASH
.30-'06

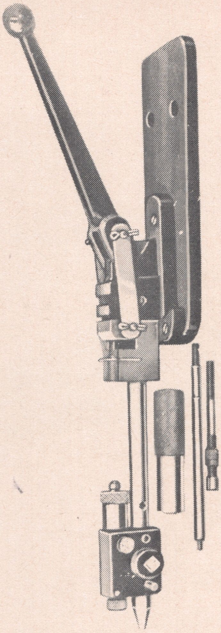
C-H PRIMER POCKET SWAGE
(For swaging out crimped primer pockets of .30-'06 service cases.)



LOADING TOOLS

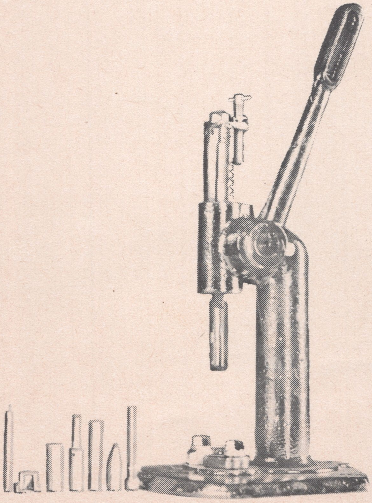


P & O SINGLE

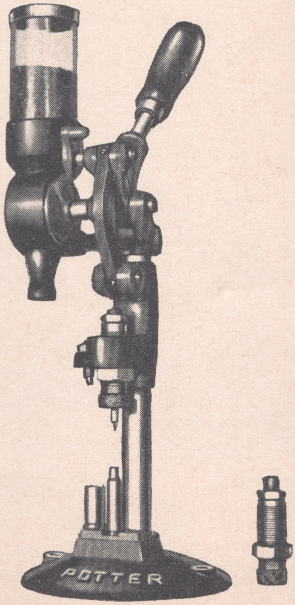


BELDING & MULL

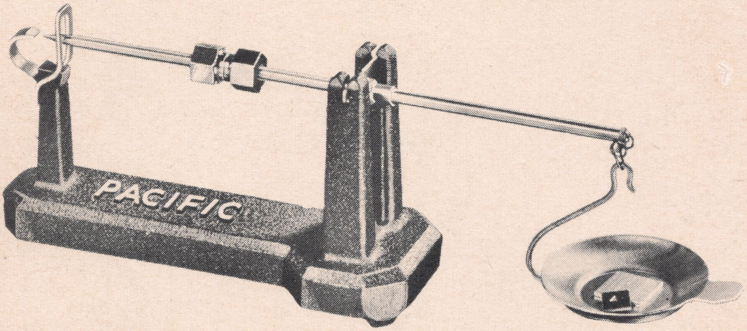
YANKEE MODEL D



POTTER SIMPLEX

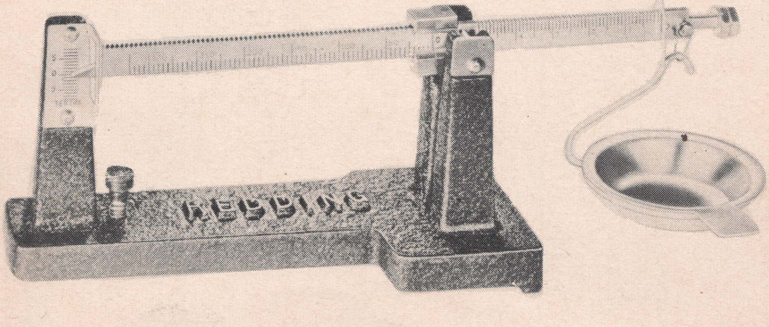


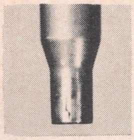
POWDER SCALES

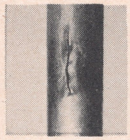


PACIFIC

REDDING




(1)


(2)

(3)

(4)

(5)

If any of these conditions exist, the cases in question should be discarded. The only possible exception might be the case with excessive bulge. Oversize rifle chambers will cause the fired case to show excessive bulge. As long as the shooter is well aware of the condition, these cases may be reloaded with moderate charges. Full loads at maximum pressure levels should never be used in bulged cases because the extreme pressures might rupture them. When bulged cases are to be reloaded, they should be neck-sized only and not full-length resized which will *work-harden* the brass in the area of the bulge.

Cases to be reloaded must be relatively clean and lightly lubricated in order to resize them easily. This is accomplished by wiping them with a cloth containing a small amount of case lubricant. By cleaning and lubricating the cases while inspecting them, all three jobs can be done at once. One caution to observe is the over-lubrication of cases. If too much lubricant is used, it will build up in the die and cause *oil dents,* generally in the shoulder of the case.

STEP TWO — CASE RESIZING, DECAPPING AND PRIMING

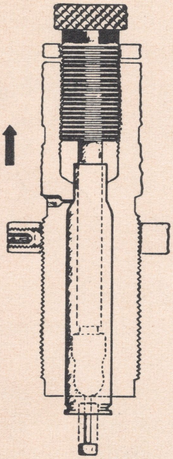
Cases to be reloaded must be resized or reduced to such dimensions that the neck will grip a new bullet and fit properly in the chamber of a rifle. If the fired cases are to be used in the same rifle again, it is recommended that they be neck sized only. This means the body of the case is left as it was and only the neck resized to proper dimensions. Cases should not be full length resized unless the cartridges are to be used in another rifle or the fired cases have expanded too much to go back in the rifle chamber easily. Consecutive full length resizing hardens brass and shortens case life greatly.

Most resizing dies as furnished by loading tool manufacturers are constructed similar to the one shown in figures A, B, and C. (Cross sections of loading dies are shown on page 20 describing the various parts of them.)

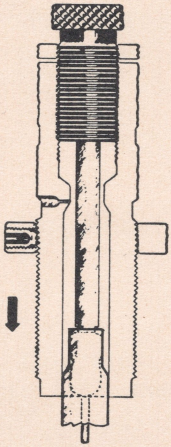
Check decapping pin for centering. It is not uncommon for the decapping stem in the sizing die to become slightly bent so the decapping pin is not centered in the die. When this occurs the decapping pin does not hit the flash hole and is frequently broken. It may also pierce the web of the cartridge case and ruin several cases before discovery. It is best to check the pin for being on center before screwing the die into the press frame. The stem is easily straightened if found bent.

To begin the resizing operation, place the die in the press so that when the shell holder is moved to the top of the stroke, it nearly touches the bottom of the die. Then adjust the decapping rod so the decapping pin hangs below the bottom of the die about 3/8 of an inch. The expanding plug, however, should always lie

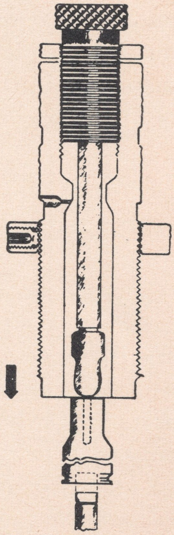
A



B



C



about 1/16 inch above the bottom of the die, otherwise, it will hit the web of the case before it has entered the die completely. Whether the die is made for neck sizing or full length sizing, it can be adjusted the same way.

To perform the resizing operation, place a case in the shell holder and move the operating lever the full length of the stroke. This will move the case all the way into the die if the die has been set properly. The case will be positioned as shown in Figure A, which shows a case in a full length resizing die. The case has been made to conform to the contour of the die and the decapping pin has pushed the fired primer out. Moving the operating lever in the opposite direction from before will remove the case from the die. As the case is going out of the die, the expander plug is automatically pulled through the neck of the case, resizing it to proper dimension as in Figure B. It is at this point that primer pocket cleaning takes place. It is not necessary to clean primer pockets after every firing but they should be inspected after every four or five reloadings to be sure no large deposits of residue have built up impairing proper primer seating. The residue can be removed with a small blade or wire brush. Before the case reaches the bottom of the stroke, a new primer is placed in the primer inserting punch located below the shell holder in line with the die. The case in the shell holder is then moved down over the priming punch, forcing the new primer into the case.

STEP THREE — CHECKING THE RESIZED CASE

After the cases have been resized and primed, they should be checked for size to be sure they will fit the rifle they are to be used in. Try one of the cases in the rifle. If it does not go in the chamber easily, one or two conditions might exist. Either the case neck has lengthened sufficiently to make the case mouth tight against the forward end of the chamber: or the body of the case has expanded and also lengthened too much and must be pressed into the chamber. A slight crimping or marks on the mouth of the case indicate that the case neck has lengthened and must be trimmed to standard length. Oversize cases must be full length resized in order to again fit the chamber properly.

STEP FOUR — CHARGING THE CASE WITH POWDER

Placing the correct powder charge in the case requires the use of either a powder scale or a powder measure or both. It is possible to set some powder measures without the use of a powder scale. However, due to the possibility of error, it is recommended that the measure be checked with an accurate scale. After the powder measure has been set it will *throw* charges very uniformly and more rapidly than using the scale alone.

For the beginner, the scale is the most economical and the most accurate device for the measuring of powder charges. First, set the scale to weigh the desired charge through the use of the loading data tables in this manual. Then, in order to facilitate powder handling, pour a small amount of powder from the canister into a small box or can. Weigh the charge by shaking the powder into the scale pan with a teaspoon. Place the powder funnel in the mouth of an empty case and pour the powder from the scale pan into the case. Proceed until the desired number of cases have been charged. When this has been completed, look into all the charged cases to see if the powder level appears to be consistent. There is seldom any variation in charges if a scale has been used to measure the powder. A powder measure, however, will occasionally drop a light or a heavy charge if a small amount of powder should happen to stick in the outlet tube. This is no disadvantage because it takes only an instant to check the cases and recharge any which appear inconsistent.

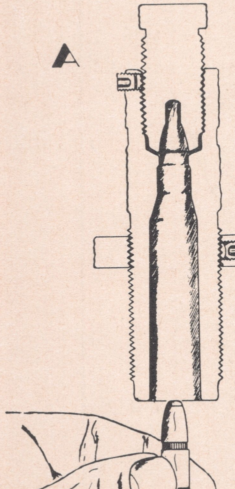
STEP FIVE — SEATING THE BULLET

There are two methods of bullet seating commonly used by handloaders. They are uncrimped seating and crimped seating. The uncrimped seating method is preferred by handloaders except where the cartridges are to be used in a tubular magazine rifle. Uncrimped bullet seating means the bullet is pushed into the neck of the case and is held only by the tension of the case neck on the shank of the bullet. Crimped seating is the same except that the mouth of the case is crimped into a cannelured groove in the bullet.

A. Uncrimped Bullet Seating — Place the bullet seating die in the press so that when the shell holder is raised it nearly touches the bottom of the die. With the die in this position, an empty case should go into the die freely. Slide a charged case into the shell holder and place the bullet to be seated on the case mouth and, holding the bullet on the case mouth between thumb and forefinger, (Fig. A) move the case up into the die as far as it will go. Remove the cartridge and check the depth the bullet was seated. If the seating depth is not satisfactory, it may be changed by turning the adjustment knob in the top of the die.

The depth the bullet is seated in the cartridge does not materially effect the ballistics of the cartridge. This does not mean seating depth will not affect accuracy. It means that seating depth may be varied considerably without creating any hazards in firing the cartridges. Experienced shooters recommend seating the bullet out far enough to barely clear the lands of the rifling for best accuracy. This might increase the overall length of the cartridge so it would not function through the magazine of the rifle, in which case the bullets would have to be seated to standard

A



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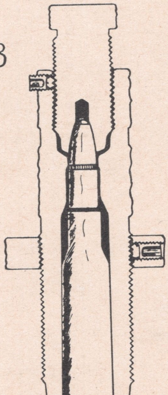
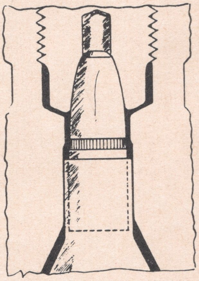
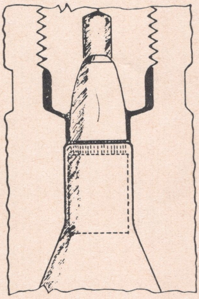


C



D



overall cartridge length. Generally speaking, bullets should be seated so the overall length of the cartridge is the same as that of a commercially loaded cartridge.

B. CRIMPED BULLET SEATING — In order to crimp seat bullets, the bullet seating die must have a crimping device built into it. Some manufacturers have the crimping feature in all their dies while others put it into dies for just the cartridges requiring crimping. And, of course, bullets must have a groove or cannelure into which the mouth of the case is crimped.

Place the crimp seating die in the press. Insert a case in the shell holder and run it up into the die. Holding the case in the die, screw the die down until it comes in contact with the case then back off approximately one-half turn. Seat a cannelured bullet as in uncrimped seating, leaving the width of the cannelure exposed outside the mouth of the case, as in Fig. C. Lock the seating adjustment knob and screw the die down approximately three-fourths of a turn. Reseat the bullet in the cartridge, Figure D. Remove it from the press and inspect the crimp.

SELECTION OF LOADS

Most Shooters who take up handloading do so because they want to get the optimum results from their rifles. To the average handloader, the process of reloading means more than just measuring a charge of powder into a primed case and seating a bullet into it. Aside from the fact that the handloader saves money by doing so, he is generally directing his efforts toward the development of special loads for his own particular rifle. Whatever he is seeking — improved accuracy, dependable big game loads, high velocity varmint loads, loads for special bullets, etc. — he will go to great lengths to achieve the results he wants.

ACCURATE HANDLOADS

Accurate handloads are probably the most difficult loads to develop because they require considerable experimentation plus proper selection of components. Great care must be taken in the inspection of cases, even going so far as to weigh each case to obtain a uniform lot. The cases should be of the same manufacture; they should be *fire formed* in the rifle to be used and then neck re-sized only; they should be the proper length and the mouths trimmed to square them up; and the primer pockets should be cleaned so the primers will seat correctly and fire uniformly. After the cases have been prepared, considerable experimentation with various charges of several different powders will be necessary to find the most accurate load for a given bullet. Sometimes changing the charge only one-half grain will make a tremendous difference in the group size. Best accuracy is reportedly obtained when the powder charge fills the case just to the base of the bullet. Proper seating of the bullet is also important. It should be seated out far enough so that it just clears the lands of the rifling at the forward end of the chamber. The bullet then starts out in the lands rather than jumping ahead to them.

Accurate handloads require the careful loading of uniform cases, primers, powder charges and uniform bullets seated properly. This kind of loading will enable a shooter to obtain excellent accuracy with his sporting rifle. Of course, he cannot expect bench rest accuracy from an average sporting rifle but he should be able to put five shots into a space of one inch at one hundred yards. Although some of the lighter lever action rifles and carbines are not capable of *minute of angle* accuracy, a good share of the bolt action rifles are.

Loading the ammunition is an important part of getting good accuracy from a rifle. But no matter how good the handloads are, the groups on the target will be no better than the ability of the rifleman to shoot with precision. Accurate handloads are the basis for winning groups but the rest is up to the rifle and the man behind it.

BIG GAME LOADS

Loading for big game is more important than many shooters realize. It is very common for a hunter to use an inefficient load for big game hunting because, one time, he got his game with one shot with that load. One hunter we know has 110 grain bullets loaded year after year for his .30-40 Krag which he uses on elk. Under favorable conditions, he will probably kill an elk; after following the blood trail as a result of wounding him on the first shot.

This brings us to a very important consideration in loading for big game. Velocity and bullet weight must be properly balanced for a given cartridge in order to obtain the most effective results. The 200 grain bullet would not be practical in the .30-30 Winchester cartridge and, likewise, the 110 grain bullet would not be of much value in the .300 H & H Magnum. As a general rule, a medium heavy weight bullet should be loaded to a velocity high enough to insure adequate expansion and penetration of the bullet on game. The following bullets would be considered properly balanced with the corresponding cartridges:

	MV
100 grain — .250-3000 Savage	2950 f/s
120 grain — .257 Roberts	2850 f/s
150 grain — .270 Winchester	2950 f/s
145 grain — 7 mm Mauser	2675 f/s
150 grain — .300 Savage	2600 f/s
180 grain — .30-'06 Spring.	2700 f/s
180 grain — .300 H & H Mag.	2950 f/s
170 grain — 8 mm Mauser	2600 f/s
250 grain — .35 Whelen	2500 f/s

It should also be borne in mind that the form factor and sectional density of the bullet determines its rate of deceleration. For a given caliber, the heavier the bullet is the better it will retain its velocity. As a comparative example, the .25 caliber 60 grain bullet loaded to 3400 f/s MV and the .25 caliber 120 grain bullet loaded to 2750 f/s MV will have the same velocity at 200 yards, approximately 2350 f/s. The 120 grain bullet will obviously have twice the number of foot-pounds of energy at the point of impact in spite of the fact it started out 650 f/s slower.

The shape of bullet used for big game loads is important, too. A pointed bullet is the best choice for long range, open shooting, because, due to its shape, it will hold its velocity well and give a flatter trajectory than a round or flat nose bullet. It is generally accepted by experienced hunters that a heavy, slow moving round or flat nosed bullet is by far the best for short range brush shooting. Light and medium weight pointed bullets are easily deflected by twigs and foliage whereas blunt pointed bullets driven at lower velocities will plow through it and still stay on course. A great many shooters have found the .30 caliber 180 grain round nose bullet very effective for all around use. Loaded to around 2600 f/s muzzle velocity, it has a good trajectory and will penetrate brush well.

There has recently been a great deal of talk about high velocity. Many shooters are under the mistaken impression that the higher the velocity is the better they will be able to kill big game. This is true up to a certain point. When the velocity at the point of impact becomes so great the bullet blows up on the surface, then the high velocity is definitely a disadvantage. Bullet disintegration, resulting from high velocity, almost always results in considerable destruction of meat as well as inadequate penetration. The ideal situation exists when the bullet penetrates well into or all the way through the animal leaving a good wound channel in its wake.

When loading ammunition for big game hunting, the muzzle velocity of the load is not nearly as important as the remaining velocity at the anticipated range. Determine just what the hunting conditions are going to be and select the bullet and load accordingly. The performance of the bullet in flight and at the point of impact is of prime importance in developing good big game loads and might make the difference between success and failure.

HIGH VELOCITY LOADS

Loading for velocity means, in most instances, that the shooter desires to obtain velocities higher than can be obtained with commercial ammunition. The arms companies, of necessity, must load ammunition for a given caliber or cartridge type at pressures which will be safe for any firearm in which the ammunition might be fired. In many cases, the ammunition might be used in lever action and bolt action rifles both. The handloader can almost always obtain higher velocities with his own ammunition and with complete safety. The loading data published in this manual shows the maximum practical velocities for many popular cartridges under average conditions.

Some development work is necessary to arrive at the load which will give the best velocity in a given rifle for a particular bullet. It would not be prudent to use the load which gives the highest velocity without first working up to it with lower pressure loads. Some rifles may be able to handle maximum loads as listed in this manual while others would not and the load would have to be reduced perhaps from one to three grains to be safe for practical purposes. Refer to the section on pressures to determine the relative safety of a load.

PRESSURES

Since a Handloader must necessarily deal in pressures, it behooves him to know some elementary facts about pressure. Pressure equipment is expensive and even a large custom handloader cannot afford pressure barrels and gauges. He will have to do as well as he can with the ordinary manifestations of pressure.

First, let us get it out of our heads that pressures are evil. They are not. It is pressure which pushes the bullet out of the barrel, and there can be no such thing as high velocity with an efficient cartridge and a good load unless there are pressures which are properly put to work in a proper manner.

When the firing pin falls on the primer, a hot jet of flame from the explosive mixture in the primer shoots out of the flash hole and sets fire to the powder. It begins to burn and throws off relatively enormous quantities of gas. The quick burning powder creates its gas very rapidly and at a very short time interval. The slower burning the powder is, the longer it takes to burn all of its solids into gas. Let it be understood that powder burns and does not explode. If it explodes or detonates, it wrecks the gun.

When the gases are formed, they apply pressure in every direction — against the head of the case, against the side of the case, and against the base of the bullet. The case itself is held in place by the chamber walls and by the face of the bolt or breech block. The bullet, though, is intended to move when the buning of the gases start it down the barrel, overcoming the tremendous resistance of the lands, moving faster and faster. As the bullet moves down the barrel, the air space is increased and the pressure falls off. That is why a rifle barrel can be very thin toward the muzzle and why a shotgun barrel should be just about paper thin without trouble. Then, when the bullet emerges from the barrel, the gas pressure quickly falls to zero.

When gases are put to work, they have to go somewhere. We control them by making them do useful work by pushing the bullet out of the barrel. Now let us suppose that someone plugs that barrel with a twig, with ice, with mud. Gases can't go anywhere. Pressures jump enormously, split the barrel to get out. Needless to say, there must be some way to get a notion as to what pressures a load gives, or any loader, including the big ammunition factories, would constantly be in trouble. However, there is much more dope about muzzle velocity than there is about pressure. There are many hundreds of chronograhs, such as the Potter Counter Chronograph used in the preparation of this book, in the country, but relatively few pressure guns. The only concerns equipped to take pressures are the loading companies and the government arsenals. The big loading companies need to know what pressures their ammunition is giving or they would be blowing their customers up and getting sued.

The conventional way of taking pressures is by the use of a crusher type of gauge. A hole is bored through the chamber of a pressure barrel. A piston is placed at this hole to the exact diameter of the hole. An arbor with an adjustable anvil is then fastened around the barrel. The crusher cylinder is placed beneath the pressure piston and the anvil. When the gun is fired, the pressure piston is driven against the crusher cylinder with the same force as is exerted against the base of the bullet. The amount of shortening of the cylinder indicates the pressure developed. Crushers made of lead are used to record low pressures, but very carefully made copper cylinders are used for high pressures of centerfire rifle cartridges. Each batch of cylinders is carefully checked in a machine giving controlled pressures and a different *tarage* table is prepared for each batch of cylinders. Cartridges to be used in pressure tests have holes bored through them to the exact size of the hole in the pressure barrel and the case is inserted into the chamber so that the hole is directly under the piston. When the cartridge is fired the crusher is removed and the resulting shortening is read off on a dial as pounds per square inch of pressure. Loading companies and arsenals also have electric strain gauges. It is believed that they are more accurate than the crusher gauges, but they are still laboratory instruments only and routine testing is done with lead and copper cylinders as indicators.

Without some knowledge of pressures a handloader will get himself into trouble. Various actions are made to withstand various amounts of pressure. The late bolt actions of heat treated alloy steel like the Winchester Model 70, late Mausers, the Remington Model 721, withstand very high pressures quite safely. On the other hand, actions of the older lever action type will not. Modern alloy steel shotgun barrels will withstand pressures which will blow out the older Damascus, twist or skelp type.

Cases vary in their ability to handle pressures. Solid head revolver cases, for example, can stand much more pressure than folded head cases. Some cases have thin walls, thin webs, others relatively thick walls and thick webs. A .300 H & H Magnum case will stand much more pressure than a .30-30 because it was made to stand 55,000 or 60,000 pounds pressure, whereas the .30-30 case is made to stand less than 40,000 pounds pressure.

The average handloader spends most of his time loading center-fire rifle cartridges, and this booklet is intended for those who reload centerfire rifle cartridges with approximately full power loads and use SPEER metal cased bullets. Pressures, of course, vary as to the amount of powder used and the kind of powder used. More powder will create more pressures than less powder, a slow-burning powder will create less pressure than a fast burning powder, if used in equal amounts. All things being equal, the heavier the bullet, the greater the pressure will be. The more the bearing surface of the bullet, the greater the pressure will be. If the same amount of powder is used, the larger the chamber of the barrel, the lower the pressure will be, and the thicker the brass of the individual case is, the higher the pressure will be. A bullet over size for the bore will give pressures greater than normal. Pressures jump when a hard alloy is used in the jacket and when the lead is excessively hardened. Pressures also jump when a smaller than normal bore is used and likewise pressures jump when the throat of the chamber is tight or when cartridge cases are shot until the necks have thickened and the bullets are held tighter than normal. Sometimes handloaders make the mistake of not trimming the necks of their cases. Then the loaded cartridges jam into the chamber so that actually the bullet is not free to go down the barrel, but has to fight its way out of the neck, which is wedged into the *leade* or the beginning of the lands. Then pressures jump very high indeed.

It is folly to say, for instance, that a 150 gr. bullet with, let us say, a charge of 50 grains of No. 4895 will give a pressure of 47,000 pounds. Such a combination would give that pressure in a particular rifle or a particular pressure barrel. The reading of that bullet and that charge in the pressure barrel would be indicative, but the same charge would give perhaps more or less pressure in another rifle, depending on the type, dimensions, and condition of the throat, the rate of twist, the bore diameter, the groove diameter, etc.

Once upon a time handloaders used to look knowingly at a fired case and fix their glittering eyes upon the primer, and then say that the pressure of that charge was 45,000 pounds or 50,000 pounds, as the case may be. Once upon a time a good deal could be told by the condition of the primers. It is now fashionable in some quarters to say that nothing can be told from the condition of the primers. That's not strictly true. The truth lies somewhere between. Something can be told about pressures from the condition of the primers, but the primer itself is just one indication of pressure.

If the primer is not flattened flush with the bolt face and completely around the primer pocket, if the primer itself is not extruded up around the firing pin leaving a sharp edged crater, if the case extracts easily from the rifle, pressures in that particular case can be called safe enough. On the other hand, if the primer is flush with the head of the case, if the primer is badly cratered, and if the extraction of the case is difficult, we can say that pressures are becoming high. If, in addition, we have a leaky primer, showing that some smoke and gas has escaped, we can say that pressures are certainly too high for that particular brass case. If the pressure has enlarged the primer pocket so that the primers drop out of the pocket, we can say that pressures are very definitely too high and possibly dangerous.

A good long time indication of the pressures of a certain load is how long the cases last. One batch of .257 cases has been used by a certain handloader for about ten years at pressures of about 40-45,000 pounds, since he has found that his most accurate load is with a 100 grain bullet and fairly moderate velocity. He has cases which have been used literally dozens of times and they are still right good cases. On the other hand, this same handloader loads a .270 to pressures between 50 and 55,000 pounds. By the time he has loaded his cases eight or ten times, the primer pockets have expanded so much that the primers seat very easily and if he uses those loaded cases he gets primer leaks. He, therefore, discards the cases when the primers simply slip in with no pressure.

An interesting thing about pressures is that often soft, poorly annealed brass, will give the appearance of high pressures when the pressures are, in fact, quite moderate. Soft brass is sticky and soft brass does not spring back when it is expanded. Pressures will open up the primer pockets and make for primer leaks in soft brass. Cases will cling to the irregularities in chamber walls and make extraction difficult.

When pressures get very high, one can see the irregularities of the bolt face imprinted on the head of the case. One can also see the contour of the extractor slot on the case. Then pressures are exceedingly high and dangerous.

Let it be said, therefore, that if primers do not show a good deal of extrusion up around the firing pin, if one never gets pierced primers and primer leaks, if the cases extract easily and last a long time without the primer pocket opening up or without needing to be full length resized, that the pressures, whatever they are, are perfectly OK.

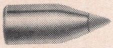
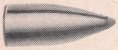
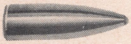
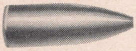
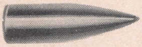
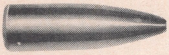
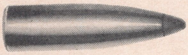
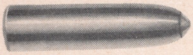
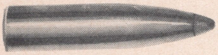
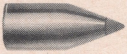
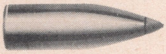
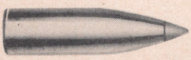
BALLISTIC PROPERTIES OF BULLETS

THE FOLLOWING is a list of SPEER BULLETS currently available to handloaders and which were used in the preparation of the loading data for this manual. There is an illustration and description of each bullet; its sectional density; and its ballistic coefficient. The sectional density of a bullet is *it's weight, in pounds, divided by the square of it's diameter, in inches.* It is determined by the formula W/d^2. A bullet's sectional density is a good measure of the bullet's penetration characteristics. The larger the sectional density value the better the penetration is likely to be.

Sectional density may be used as a guide to determine the bullet's ability to overcome resistance of the air and shoot flat but the *ballistic coefficient* of the bullet represents that property more accurately. For instance, a blunt nose bullet with good sectional density may not shoot as flat as a pointed bullet with poorer sectional density. The ballistic coefficient is *a ratio between the sectional density of a bullet and its coefficient of form.* It is expressed by the formula W/id^2 with i being the coefficient of form. The higher the ballistic coefficient of a bullet the more effectively it will push through the air and the flatter it will shoot.

Following the list of bullets are two tables showing bullet energy for all the weights listed and at velocities from 1100 foot-seconds to 4000 foot-seconds. The velocity for average ranges can be estimated with reasonable accuracy from the loading data section. This velocity can then be matched with the bullet weight to be used to obtain the energy in foot-pounds. The energy of a bullet may also be calculated by multiplying the weight of the bullet in pounds by the velocity squared and the result divided by the acceleration of gravity, or 32.16. This may be simplified by using the formula: $Wv^2/450240$, using the weight of the bullet in grains.

SPEER BULLETS

	DESCRIPTION	SECTIONAL DENSITY	BALLISTIC COEFFICIENT
	.22 Cal. 40 Grain No. 224-40-OS-SP	.114	.143
	.22 Cal. 45 Grain No. 224-45-4-SP	.128	.160
	.22 Cal. 50 Grain No. 224-50-6-SP	.142	.167
	.22 Cal. 52 Grain No. 224-52-6-HP	.147	.195
	.22 Cal. 55 Grain No. 224-55-6-SP	.157	.209
	6 mm 75 Grain No. 243-75-8-HP	.181	.267
	6 mm 90 Grain No. 243-90-8-SP	.217	.323
	6 mm 105 Grain No. 243-105-GP-SP	.254	.256
	6 mm 105 Grain No. 243-105-10-SP	.254	.395
	.25 Cal. 60 Grain No. 257-60-OS-SP	.129	.161
	.25 Cal. 87 Grain No. 257-87-5-SP	.188	.294
	.25 Cal. 100 Grain No. 257-100-6-SP	.216	.354

SPEER BULLETS

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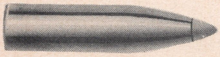
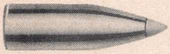
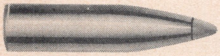
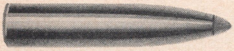
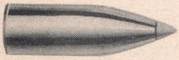
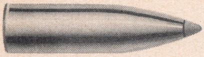
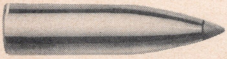
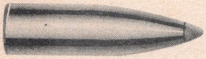
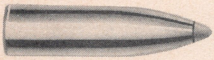
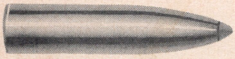
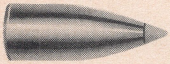
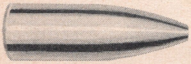
	.25 Cal. 120 Grain No. 257-120-6-SP	.258	.423
	6.5 mm 87 Grain No. 263-87-5-SP	.179	.280
	6.5 mm 120 Grain No. 263-120-6-SP	.247	.405
	6.5 mm 140 Grain No. 263-140-6-SP	.289	.482
	.270 Cal. 100 Grain No. 277-100-6-SP	.186	.288
	.270 Cal. 130 Grain No. 277-130-6-SP	.241	.395
	.270 Cal. 150 Grain No. 277-150-6-SP	.278	.463
	7 mm 130 Grain No. 284-130-6-SP	.230	.365
	7 mm 145 Grain No. 284-145-6-SP	.257	.425
	7 mm 160 Grain No. 284-160-6-SP	.284	.469
	.30 Cal. 110 Grain No. 3085-110-OS-SP	.166	.261
	.30 Cal. 130 Grain No. 3085-130-6-HP	.195	.281

SPEER BULLETS

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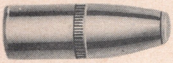
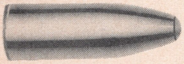
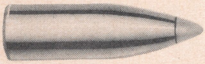
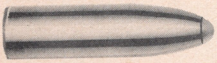
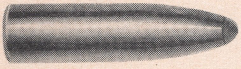
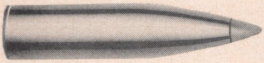
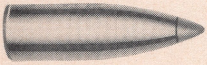
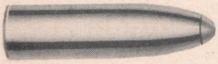
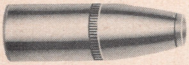
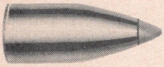
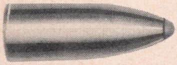
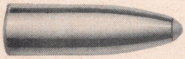
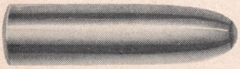
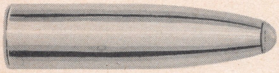
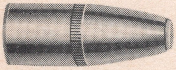
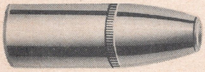
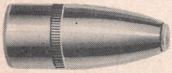
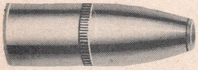
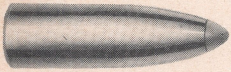
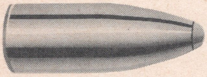
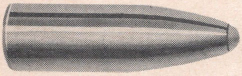
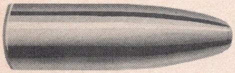
	.30 Cal. 150 Grain No. 3085-150-WR-SP	.225	.244
	.30 Cal. 150 Grain No. 3085-150-GP-SP	.225	.218
	.30 Cal. 150 Grain No. 3085-150-6-SP	.225	.387
	.30 Cal. 180 Grain No. 3085-180-GP-SP	.270	.288
	.30 Cal. 180 Grain No. 3085-180-6-SP	.270	.435
	.30 Cal. 200 Grain No. 3085-200-GP-SP	.301	.425
	.30 Cal. 200 Grain No. 3085-200-6-SP	.301	.502
	.303 Cal. 150 Grain No. 311-150-6-SP	.221	.365
	.303 Cal. 180 Grain No. 311-180-GP-SP	.265	.282
	.32 Cal. 170 Grain No. 321-170-WR-SP	.236	.242
	8 mm 125 Grain No. 323-125-OS-SP	.171	.225
	8 mm 150 Grain No. 323-150-6-SP	.205	.298

SPEER BULLETS

	DESCRIPTION	SECTIONAL DENSITY	BALLISTIC COEFFICIENT
	8 mm 170 Grain No. 323-170-SS-SP	.232	.331
	8 mm 225 Grain No. 323-225-GP-SP	.309	.395
	.333 Cal. 275 Grain No. 333-275-SS-SP	.354	.499
	.348 Cal. 180 Grain No. 349-180-W-SP	.211	.222
	.348 Cal. 220 Grain No. 349-220-W-SP	.258	.272
	.35 Cal. 180 Grain No. 3585-180-R-SP	.201	.223
	.35 Cal. 220 Grain No. 3585-220-R-SP	.246	.267
	.35 Cal. 250 Grain No. 3585-250-6-SP	.279	.423
	.375 Cal. 235 Grain No. 3755-235-SS-SP	.239	.257
	.375 Cal. 285 Grain No. 3755-285-SS-SP	.289	.375
	.375 Cal. 285 Grain No. 3755-285-SS-FMJ	.289	.375

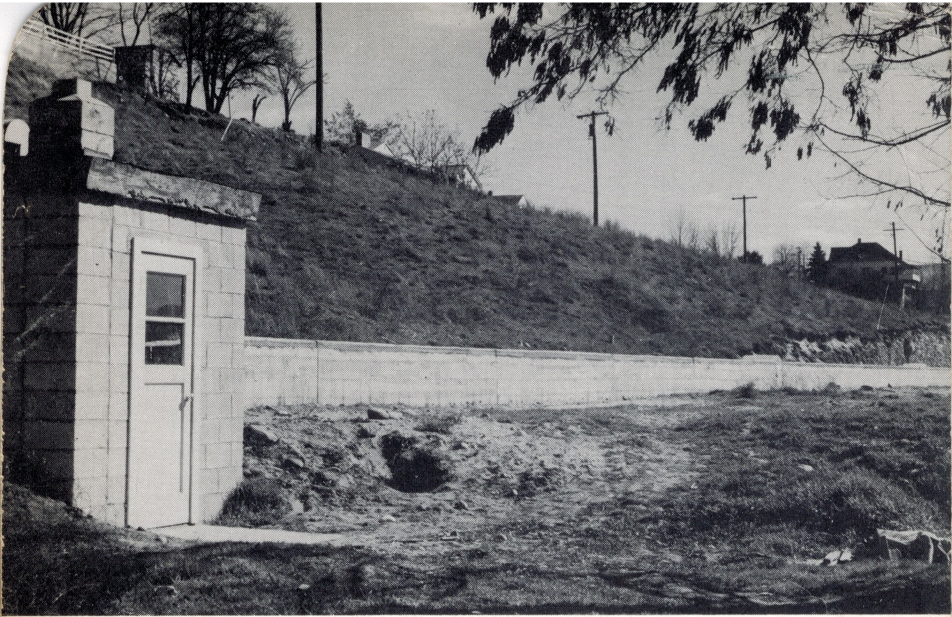
BULLET ENERGY TABLE (FOOT POUNDS)

VELOCITY	BULLET WEIGHT—GRAINS									
Ft. Sec.	40	45	50	55	60	87	100	110	120	130	140
1100	107	120	134	147	161	233	268	295	322	349	376
1200	128	144	160	176	192	277	319	351	383	415	447
1300	150	168	187	206	225	325	375	412	450	487	524
1400	174	195	217	239	261	377	435	478	522	565	609
1500	199	224	249	274	299	434	498	548	598	648	698
1600	227	255	284	312	341	493	568	624	682	738	795
1700	257	289	321	353	385	558	642	706	770	834	898
1800	287	323	359	395	432	625	718	792	863	934	1005
1900	321	361	401	442	482	696	802	882	962	1042	1122
2000	355	409	444	488	532	770	888	976	1064	1152	1242
2100	391	440	489	538	587	850	978	1075	1173	1271	1369
2200	430	483	537	590	644	934	1073	1181	1288	1396	1503
2300	470	529	587	646	704	1021	1173	1292	1409	1526	1644
2400	512	575	638	703	767	1110	1277	1405	1532	1660	1788
2500	555	624	694	764	833	1206	1387	1526	1665	1803	1942
2600	599	674	749	824	899	1302	1498	1648	1798	1948	2095
2700	647	728	808	890	970	1405	1616	1778	1940	2102	2264
2800	696	786	870	958	1042	1511	1738	1913	2088	2262	2434
2900	747	840	933	1028	1119	1620	1864	2052	2238	2426	2612
3000	797	897	996	1092	1195	1730	1991	2191	2390	2590	2788
3100	824	927	1028	1131	1235	1790	2060	2268	2472	2678	2886
3200	909	1023	1135	1248	1362	1973	2270	2498	2728	2952	3180
3300	965	1085	1204	1323	1446	2107	2413	2654	2893	3135	3375
3400	1025	1153	1282	1410	1538	2224	2562	2820	3078	3332	3590
3500	1086	1221	1357	1493	1629	2360	2716	2988	3258	3528	3800
3600	1150	1294	1437	1583	1726	2500	2877	3164	3452	3740	4025
3700	1214	1367	1517	1670	1821	2640	3035	3340	3644	3948	4250
3800	1280	1440	1600	1760	1920	2782	3200	3520	3840	4160	4480
3900	1347	1517	1684	1853	2011	2931	3372	3710	4045	4380	4720
4000	1418	1592	1773	1950	2128	3086	3547	3900	4255	4610	4970

BULLET ENERGY TABLE (FOOT POUNDS)

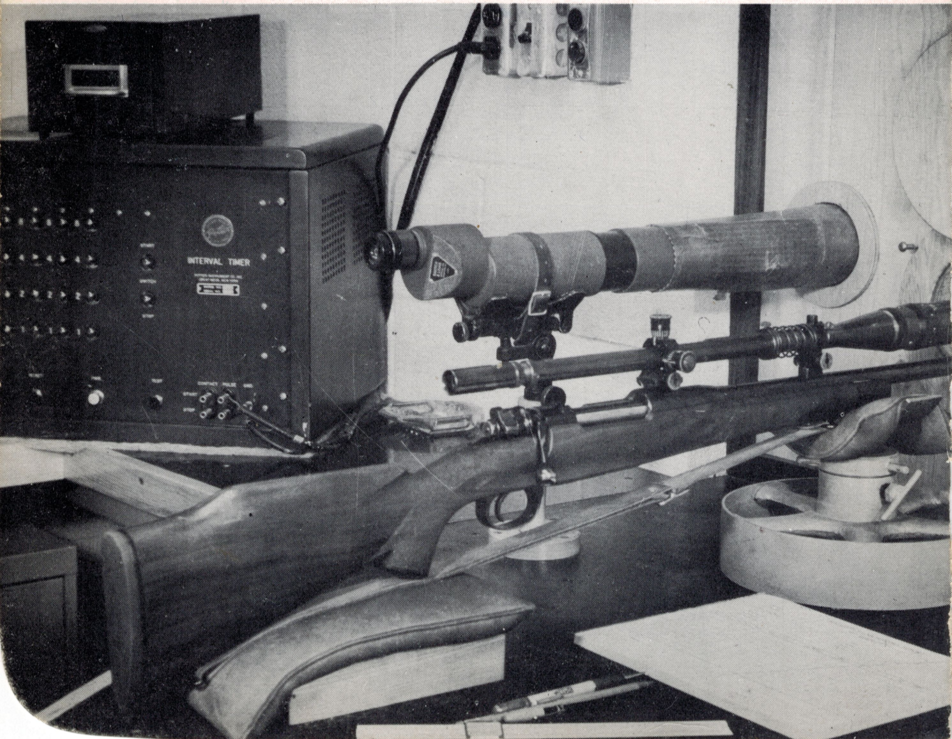
VELOCITY	BULLET WEIGHT—GRAINS									
Ft. Sec.	145	150	160	170	180	200	220	235	250	275	285
1100	389	402	429	457	483	537	591	630	671	738	765
1200	463	479	512	543	575	639	703	752	799	878	912
1300	543	562	599	637	674	750	825	881	937	1031	1068
1400	630	652	696	739	783	869	956	1021	1087	1195	1238
1500	722	747	797	847	897	997	1096	1170	1245	1372	1420
1600	823	852	908	965	1021	1133	1248	1330	1418	1558	1613
1700	930	962	1026	1090	1154	1282	1411	1511	1602	1763	1827
1800	1041	1078	1149	1222	1293	1437	1580	1689	1796	1977	2048
1900	1162	1202	1282	1362	1443	1603	1763	1882	2004	2205	2283
2000	1286	1330	1418	1508	1597	1774	1951	2082	2218	2440	2530
2100	1418	1468	1564	1662	1760	1956	2151	2298	2444	2688	2786
2200	1556	1610	1718	1825	1933	2145	2362	2520	2686	2948	3058
2300	1703	1762	1878	1996	2112	2346	2585	2755	2935	3225	3343
2400	1853	1916	2045	2172	2298	2552	2812	3000	3195	3510	3635
2500	2012	2081	2220	2358	2496	2773	3053	3260	3470	3818	3950
2600	2187	2248	2396	2548	2697	2997	3296	3520	3749	4122	4270
2700	2345	2428	2588	2748	2910	3232	3558	3800	4040	4450	4605
2800	2521	2609	2784	2957	3131	3479	3829	4085	4349	4785	4958
2900	2702	2797	2986	3170	3358	3732	4101	4380	4665	5130	5315
3000	2878	2988	3188	3386	3586	3985	4380	4680	4978	5480	5680
3100	2990	3090	3296	3502	3710	4120	4530	4837	5150	5682	5870
3200	3292	3410	3634	3861	4085	4545	5000	5332	5680	6250	6475
3300	3495	3616	3858	4100	4340	4820	5308	5660	6030	6635	6870
3400	3718	3848	4105	4360	4618	5130	5642	6025	6410	7062	7304
3500	3938	4070	4345	4618	4884	5430	5975	6380	6785	7475	7735
3600	4165	4315	4600	4890	5178	5752	6330	6760	7190	7920	8200
3700	4401	4555	4860	5165	5470	6074	6680	7144	7592	8350	8650
3800	4645	4800	5120	5440	5760	6400	7040	7520	8000	8800	9120
3900	4885	5055	5394	5730	6070	6742	7420	7925	8430	9270	9600
4000	5150	5320	5674	6025	6380	7092	7800	8338	8870	9750	10010

LOADING DATA



EXTERIOR VIEW OF BALLISTICS RANGE

INTERIOR VIEW SHOWING BENCHREST


INTERVAL TIMER

IMPORTANT NOTES ON LOADING TABLES

The following pages list loading data for a great many different rifle cartridges. The handloader will find them of great value in the selection of loads for his rifle. There is data shown for every powder suitable for loading a particular cartridge with all Speer Bullets available for it. Every one of the loads has been chronographed with a Potter electronic chronograph, the most accurate chronographing instrument in use today. The data was developed using standard sporting rifles. Instrumental velocities were taken at a point 60 feet from the muzzle of the rifle and then converted to muzzle velocity. Also, the tables show velocities at two hundred yards. These two hundred yard figures are not the result of chronographed tests. They are calculated and are shown only to give an approximation of the velocity at that range. It is reasonable to assume that these figures will be within five per cent of the actual velocities at two hundred yards.

In arriving at what is considered a safe load for a given cartridge, powder and bullet, we used three methods of pressure detection. The first of these is the appearance of the fired primer. As the powder charges are successively increased, the primer metal is forced into the bolt slightly around the firing pin. In some rifles this could be an indication of excessive pressures. In others, where the firing pin fits loosely in the firing pin hole in the bolt, it might not mean excessive pressure, especially if there is still considerable radius on the primer. Primer flattening and extrusion are not necessarily a positive identification of excessive pressures. The second method of detecting excessive pressure is the relative ease with which the fired cartridge is extracted. If there is slight resistance encountered in opening the bolt, then the pressure for the load is near maximum for the case. If the bolt is difficult to open after firing the case, then the pressure exceeds maximum for the case and the particular chamber the case was fired in. Rifle chambers vary in smoothness, however, and difficult extraction might be due to a rough chamber rather than high pressures. The condition of chamber is taken into consideration if cases do not extract easily. The third method of detecting pressures is *head expansion*. When the pressure for a load causes the head of the case to increase in diameter measurably, then the load is excessive for the case being used. An increase in head diameter of .001" would more than indicate excessive pressure.

All three of these methods of pressure detection were used to determine the maximum loads for the majority of the cartridges listed. The powder charges for a given bullet in a given cartridge were increased successively until indications of excessive pressure were present. The charge was then decreased from one to four grains, depending on the particular cartridge, and the resultant charge considered maximum for that powder, bullet, case and rifle. If the loads being tested might be used in a lever action rifle, then the primer condition alone was used to detect pressures. Commercial ammunition was fired in the rifle and the condition of the primers noted. Removing bullets and powder from more of the same ammunition, handloads were tested and when the primers showed comparable pressures to the commercial loads fired, provided the velocities obtained were reasonable, then the loads were considered maximum for the cartridge.

The procedures outlined above are the best and the only practical means of developing what can be considered usable safe loads. Pressure testing equipment is of course the most positive method of determining the pressure of a load but it still does not show what the pressure will be in another rifle and with different cases. It is well to note that the loading data tables, although exceedingly accurate, can only give the handloader a close approximation of the velocities he will obtain in his rifle. Variations in rifles cause variations in pressures and subsequent variations in velocities. Also, some of the loads might create excessive pressures in some rifles. The maximum loads listed are considered safe loads ONLY FOR THE CASES AND RIFLES IN WHICH THEY WERE FIRED.

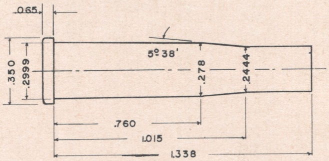
Handloaders should be cautioned to start with the lowest listed loads and gradually work up to maximum loads. Noted gun authorities recognize that a load might be perfectly safe in one rifle and dangerous in another. Thus it should be repeated: DO NOT USE MAXIMUM LISTED LOADS UNTIL LOWER CHARGES HAVE BEEN FIRED WITHOUT ANY INDICATION OF EXCESSIVE PRESSURES!

LOADING DATA

Powder number 4895 was used in developing many of the following loads. It is an excellent powder for many cartridges giving pressures and velocities comparable to those obtained with DuPont Number 4064. This same powder, a blended lot, is presently available from B. E. Hodgdon, Merriam, Kansas.

Remington 9½ primers were used in developing a good share of these loads. If Winchester 120 primers are to be used, the loads should be reduced one-half to one full grain depending on the capacity of the case.

THE .22 HORNET



Now over twenty years old, the .22 Hornet was the first standard factory produced cartridge ever designed especially for varmint shooting. Before the Hornet was developed, the .25/20 was probably the leading centerfire varmint cartridge, but the coming of the Hornet made the .25/20 and its running mate, the .32/20 practically obsolete.

Winchester first brought out the Hornet cartridge in 1930, and later brought out the Model 54 Winchester rifle for it. The first Savage rifle for the .22 Hornet cartridge was a Model 23-D. Since then Winchester and Savage have brought out other models for the cartridge, many thousands of rifles have been made up on single shot actions, and many have been imported from Europe.

The small case capacity of the Hornet demands that a quick-burning powder be used. DuPont No. 4227 and Hercules No. 2400 were both especially developed for the Hornet. Both are small grained and fast burning, but No. 2400 apparently is faster than No. 4227. For the most part, the Hornet rifles do better with bullets measuring .223 than with the larger .224 bullets. Heavier bullets may be used in the Hornet but if one does, velocity must of necessity drop off.

.22 HORNET, 40 Grain Speer Bullet — Catalog No. 224-40-OS-SP

GRAINS	POWDER NUMBER	MUZZLE VELOCITY	200 YARD VELOCITY	GRAINS	POWDER NUMBER	MUZZLE VELOCITY	200 YARD VELOCITY
12.3	4227	2962	2036	10.8	2400	2856	1931
11.8	4227	2875	1950	10.3	2400	2740	1862
11.3	4227	2797	1900	9.8	2400	2700	1830

NOTE: Maximum loads listed should be used with caution.

.22 HORNET, 45 Grain Speer Bullet — Catalog No. 224-45-4-SP

GRAINS	POWDER NUMBER	MUZZLE VELOCITY	200 YARD VELOCITY	GRAINS	POWDER NUMBER	MUZZLE VELOCITY	200 YARD VELOCITY
12.5	4198	2592	1865	10.3	2400	2621	1890
12.0	4198	2493	1796	9.8	2400	2587	1867
11.5	4198	2393	1721	9.3	2400	2481	1780
12.0	4227	2786	2004				
11.5	4227	2750	1982				
11.0	4227	2640	1900				

NOTE: Maximum loads listed should be used with caution.

.22 HORNET, 50 Grain Speer Bullet — Catalog No. 224-50-6-SP

GRAINS	POWDER NUMBER	MUZZLE VELOCITY	200 YARD VELOCITY	GRAINS	POWDER NUMBER	MUZZLE VELOCITY	200 YARD VELOCITY
12.5	4198	2520	1939	10.0	2400	2539	1949
12.0	4198	2421	1862	9.5	2400	2453	1881
11.5	4198	2340	1800	9.0	2400	2343	1800
12.0	4227	2655	2020				
11.5	4227	2590	1990				
11.0	4227	2540	1950				

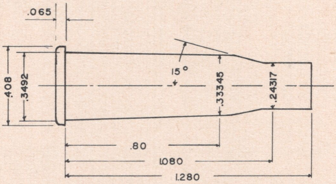
NOTE: Maximum loads listed should be used with caution.

.22 HORNET, 55 Grain Speer Bullet — Catalog No. 224-55-6-SP

GRAINS	POWDER NUMBER	MUZZLE VELOCITY	200 YARD VELOCITY	GRAINS	POWDER NUMBER	MUZZLE VELOCITY	200 YARD VELOCITY
12.5	4198	2433	1912	9.5	2400	2385	1910
12.0	4198	2350	1850	9.0	2400	2216	1762
11.5	4198	2241	1770	8.5	2400	2063	1651
11.5	4227	2425	1921				
11.0	4227	2341	1857				
10.5	4227	2263	1810				

NOTE: Maximum loads listed should be used with caution.

THE .218 BEE



Based on a necked-down .32/20 case, the .218 Bee has a somewhat greater powder capacity than the .22 Hornet and drives bullets of the same weight at a good deal higher velocity. A Bee is an excellent little cartridge, with somewhat more soup than the Hornet and easier to reload. It originally came out in the Winchester Model 65 lever action, but it was never particularly popular in the lever action. Thousands of rifles have been made up on single shot actions for the Bee, and Winchester now chambers the Model 43 bolt action for the cartridge. A Czechoslovakian Z-B Mauser in .218 Bee was imported into this country for a time and the Finnish Sako has also been chambered for the cartridge. Like the Hornet, the Bee also has a blown-out sharp shoulder form, in this case the Mashburn Bee, designed by the Mashburn Arms Company of Oklahoma City.

.218 BEE, 40 Grain Speer Bullet — Catalog No. 224-40-OS-SP

GRAINS	POWDER NUMBER	MUZZLE VELOCITY	200 YARD VELOCITY	GRAINS	POWDER NUMBER	MUZZLE VELOCITY	200 YARD VELOCITY
15.0	4198	2840	1922	13.5	2400	3328	2288
14.3	4198	2733	1851	12.8	2400	3065	2080
13.5	4198	2535	1720	12.0	2400	2955	2000

15.0	4227	3250	2180				
14.3	4227	3165	2122				
13.5	4227	3015	2043				

NOTE: Maximum loads listed should be used with caution.

.218 BEE, 45 Grain Speer Bullet — Catalog No. 224-45-4-SP

GRAINS	POWDER NUMBER	MUZZLE VELOCITY	200 YARD VELOCITY	GRAINS	POWDER NUMBER	MUZZLE VELOCITY	200 YARD VELOCITY
15.0	4198	2762	1990	13.0	2400	3070	2215
14.0	4198	2587	1870	12.3	2400	2950	2125
13.0	4198	2422	1760	11.5	2400	2815	2014
14.5	4227	3109	2242				
13.8	4227	2984	2143				
13.0	4227	2835	2065				

NOTE: Maximum loads listed should be used with caution.

.218 BEE, 50 Grain Speer Bullet — Catalog No. 224-50-6-SP

GRAINS	POWDER NUMBER	MUZZLE VELOCITY	200 YARD VELOCITY	GRAINS	POWDER NUMBER	MUZZLE VELOCITY	200 YARD VELOCITY
14.5	4198	2624	2009	12.5	2400	2880	2210
14.0	4198	2531	1940	11.8	2400	2746	2110
13.5	4198	2581	1983	11.0	2400	2603	2001
14.0	4227	2895	2220				
13.3	4227	2781	2140				
12.5	4227	2663	2041				

NOTE: Maximum loads listed should be used with caution.

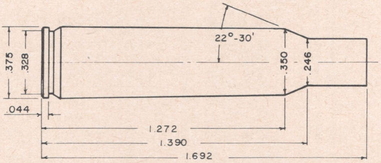
.218 BEE, 55 Grain Speer Bullet — Catalog No. 224-55-6-SP

GRAINS	POWDER NUMBER	MUZZLE VELOCITY	200 YARD VELOCITY	GRAINS	POWDER NUMBER	MUZZLE VELOCITY	200 YARD VELOCITY
14.0	4198	2464	1940	12.0	2400	2676	2110
13.3	4198	2400	1880	11.3	2400	2516	1980
12.5	4198	2282	1800	10.5	2400	2362	1861

13.5	4227	2725	2161
12.8	4227	2582	2039
12.0	4227	2420	1910

NOTE: Maximum loads listed should be used with caution.

THE .222 REMINGTON



No cartridge, with the possible exception of the Hornet, has ever caught on as quickly as the .222 Remington. A high percentage of Remington's bolt action sales are Model .722 rifles for the .222 cartridge. Unlike the .218 Bee, which started as a necked down .25/20 case, or the .22 Hornet, which is simply a modernization of the old .22 Winchester centerfire case, the .222 is an entirely different and brand new cartridge. In power it is about midway between the .22 Hornet and the .220 Swift. It is a most excellent 225 and possibly 250 yard varmint cartridge, with the powder capacity to drive the bullets of the same weight as those used by the Hornet and the Bee at a good deal higher velocity and with a consequent flatter trajectory. The cartridge is also getting a reputation for very fine accuracy.

The cartridge is factory loaded with a special DuPont powder not available for hand loaders. It looks much like No. 2400, but it isn't. However, probably the best powder commercially available for the .222 is No. 4198. Most .222 rifles have a groove diameter of about .224.

.222 REMINGTON, 40 Grain Speer Bullet — Catalog No. 224-40-OS-SP

GRAINS	POWDER NUMBER	MUZZLE VELOCITY	200 YARD VELOCITY	GRAINS	POWDER NUMBER	MUZZLE VELOCITY	200 YARD VELOCITY
24	3031	3296	2212	23	4198	3565	2410
23	3031	3097	2100	22	4198	3369	2291
22	3031	2990	2010	21	4198	3083	2095

25	HV 2	3267	2210	19	4227	3267	2210
24	HV 2	3195	2130	18	4227	3130	2120
23	HV 2	3095	2100	17	4227	3035	2060

NOTE: Maximum loads listed should be used with caution.

.222 REMINGTON, 45 Grain Speer Bullet — Catalog No. 224-45-4-SP

GRAINS	POWDER NUMBER	MUZZLE VELOCITY	200 YARD VELOCITY	GRAINS	POWDER NUMBER	MUZZLE VELOCITY	200 YARD VELOCITY
24.0	3031	3227	2312	23.0	4198	3520	2529
23.0	3031	3112	2228	22.0	4198	3400	2445
22.0	3031	2987	2147	21.0	4198	3171	2283
25.0	HV 2	3310	2380	18.0	4227	3082	2221
24.5	HV 2	3187	2300	17.0	4227	2936	2118
23.5	HV 2	3028	2181	16.0	4227	2804	2002

NOTE: Maximum loads listed should be used with caution.

.222 REMINGTON, 50 Grain Speer Bullet — Catalog No. 224-50-6-SP

GRAINS	POWDER NUMBER	MUZZLE VELOCITY	200 YARD VELOCITY	GRAINS	POWDER NUMBER	MUZZLE VELOCITY	200 YARD VELOCITY
27.0	4320	3140	2405	24.0	3031	3155	2418
26.0	4320	3050	2340	23.0	3031	2978	2280
25.0	4320	2904	2223	22.0	3031	2835	2175
26.0	4895	3042	2340	22.5	4198	3287	2522
25.0	4895	2990	2290	21.5	4198	3136	2405
24.0	4895	2920	2240	20.5	4198	2893	2220

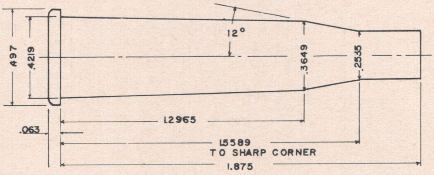
NOTE: Maximum loads listed should be used with caution.

.222 REMINGTON, 55 Grain Speer Bullet —Catalog No. 224-55-6-SP

GRAINS	POWDER NUMBER	MUZZLE VELOCITY	200 YARD VELOCITY	GRAINS	POWDER NUMBER	MUZZLE VELOCITY	200 YARD VELOCITY
27	4320	3067	2420	24	3031	3137	2463
25	4320	2930	2305	23	3031	3011	2365
23	4320	2675	2104	22	3031	2847	2242
26	4895	3073	2461	21	4198	3001	2362
25	4895	2950	2322	20	4198	2850	2262
24	4895	2838	2238	19	4198	2690	2120

NOTE: Maximum loads listed should be used with caution.

THE .219 ZIPPER



A CARTRIDGE which was evolved from a shortened and necked-down .25/35 case, the .219 Zipper originally appeared in a Winchester lever action rifle. It was never a particularly accurate cartridge in that rifle, because of the long whippy barrel, the two-piece stock, and the lever action, which does not lock up a case as tightly as a single shot or a bolt action. The cartridge got the reputation of being quite inaccurate. However, when .219 Zipper rifles were built up on .30/40 Krag actions and on various single shot actions, the cartridge showed that it was very accurate indeed. Because of the larger case, many of the slower-burning powders can be used in the .219 Zipper, but probably No. 4198 is about as good as any.

.219 ZIPPER, 40 Grain Speer Bullet — Catalog No. 224-40-OS-SP

GRAINS	POWDER NUMBER	MUZZLE VELOCITY	200 YARD VELOCITY	GRAINS	POWDER NUMBER	MUZZLE VELOCITY	200 YARD VELOCITY
33.0	4320	3844	2620	30.0	3031	3830	2600
31.0	4320	3775	2560	28.0	3031	3673	2495
29.0	4320	3645	2478	26.0	3031	3633	2462
32.0	4064	3812	3582	25.0	4198	3835	2600
30.0	4064	3613	2448	23.5	4198	3753	2545
28.0	4064	3532	2400	22.0	4198	3497	2365
33.0	4895	3825	2600	23.0	4759	3665	2482
31.0	4895	3718	2520	21.5	4759	3493	2370
29.0	4895	3695	2505	20.0	4759	3355	2280

NOTE: Maximum loads listed should be used with caution.

.219 ZIPPER, 45 Grain Speer Bullet — Catalog No. 224-45-4-SP

GRAINS	POWDER NUMBER	MUZZLE VELOCITY	200 YARD VELOCITY	GRAINS	POWDER NUMBER	MUZZLE VELOCITY	200 YARD VELOCITY
32.0	4320	3705	2665	29.0	3031	3750	2700
30.0	4320	3646	2622	27.0	3031	3642	2622
28.0	4320	3503	2523	25.0	3031	3481	2506
31.0	4064	3650	2622	24.0	4198	3636	2620
29.0	4064	3585	2581	22.5	4198	3483	2517
27.0	4064	3502	2521	21.0	4198	3335	2400
32.0	4895	3794	2725	21.0	4759	3348	2416
30.0	4895	3695	2660	19.5	4759	3223	2321
28.0	4895	3550	2560	18.0	4759	3134	2248

NOTE: Maximum loads listed should be used with caution.

.219 ZIPPER, 50 Grain Speer Bullet — Catalog No. 224-50-6-SP

GRAINS	POWDER NUMBER	MUZZLE VELOCITY	200 YARD VELOCITY	GRAINS	POWDER NUMBER	MUZZLE VELOCITY	200 YARD VELOCITY
31.0	4320	3510	2700	28.0	3031	3632	2818
29.0	4320	3397	2600	26.5	3031	3489	2700
27.0	4320	3145	2418	25.0	3031	3395	2620
29.0	4064	3483	2678	23.0	4198	3375	2582
27.0	4064	3355	2570	21.5	4198	3175	2440
25.0	4064	3210	2462	20.0	4198	3055	2341
29.0	4895	3441	2660	34.0	4350	3394	2600
27.0	4895	3241	2512	32.0	4350	3170	2435
25.0	4895	3135	2442	30.0	4350	2943	2260

NOTE: Maximum loads listed should be used with caution.

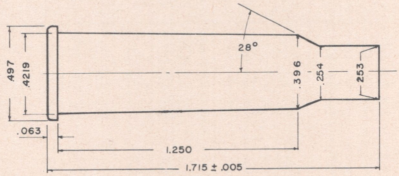
.219 ZIPPER, 55 Grain Speer Bullet — Catalog No. 224-55-6-SP

GRAINS	POWDER NUMBER	MUZZLE VELOCITY	200 YARD VELOCITY	GRAINS	POWDER NUMBER	MUZZLE VELOCITY	200 YARD VELOCITY
32.0	4350	2975	2340	29.0	4895	3253	2560
30.0	4350	2895	2278	27.0	4895	3035	2383
28.0	4350	2655	2085	25.0	4895	2875	2262
29.0	4320	3120	2460	27.0	3031	3290	2598
27.0	4320	2937	2307	25.5	3031	3173	2500
25.0	4320	2775	2182	24.0	3031	2971	2340

29.0	4064	3230	2542	22.0	4198	3035	2390
27.0	4064	3029	2382	20.5	4198	2955	2322
25.0	4064	2937	2310	19.0	4198	2751	2162

NOTE: Maximum loads listed should be used with caution.

THE .219 DONALDSON WASP



THE WASP is very accurate and for the most part satisfactory. It is a wildcat. Cases are made from .219 Zipper brass by shortening, re-necking and blowing out. The Wasp has won many bench rest shoots in special, heavy barrel, single shot, bolt action rifles, and it has been fairly popular in lighter bolt action varmint rifles and single shots for woodchuck shooting. Whether the Wasp is any more accurate basically than a good many other similar cartridges is open to question. The story is that Wasp pressures are quite high. A cartridge company technician, who refuses to be quoted, has said that the classic Wasp load of 27½ grs. of No. 3031 with a 50 gr. bullet gives pressures of about 60,000 pounds.

.219 DONALDSON WASP, 40 Grain Speer Bullet—Catalog No. 224-40-OS-SP

GRAINS	POWDER NUMBER	MUZZLE VELOCITY	200 YARD VELOCITY	GRAINS	POWDER NUMBER	MUZZLE VELOCITY	200 YARD VELOCITY
32.0	4064	3750	2542	32.0	3031	4027	2742
31.0	4064	3662	2483	31.0	3031	3945	2680
30.0	4064	3577	2421	30.0	3031	3815	2583

32.0	4895	3810	2582	26.5	4198	3872	2623
30.5	4895	3682	2500	25.8	4198	3777	2560
29.0	4895	3533	2397	25.0	4198	3716	2520

NOTE: Maximum loads listed should be used with caution.

.219 DONALDSON WASP, 45 Grain Speer Bullet—Catalog No. 224-45-4-SP

GRAINS	POWDER NUMBER	MUZZLE VELOCITY	200 YARD VELOCITY	GRAINS	POWDER NUMBER	MUZZLE VELOCITY	200 YARD VELOCITY
32.5	4320	3685	2660	31.0	3031	3895	2805
31.5	4320	3595	2583	30.0	3031	3780	2723
30.5	4320	3482	2515	29.0	3031	3770	2718
32.0	4064	3755	2700	25.5	4198	3685	2660
31.0	4064	3638	2620	24.5	4198	3523	2540
30.0	4064	3496	2520	23.5	4198	3380	2440
32.5	4895	3688	2660				
31.0	4895	3563	2570				
30.0	4895	3478	2500				

NOTE: Maximum loads listed should be used with caution.

.219 DONALDSON WASP, 50 Grain Speer Bullet—Catalog No. 224-50-6-SP

GRAINS	POWDER NUMBER	MUZZLE VELOCITY	200 YARD VELOCITY	GRAINS	POWDER NUMBER	MUZZLE VELOCITY	200 YARD VELOCITY
32.0	4320	3592	2760	30.0	3031	3812	2922
31.0	4320	3535	2718	29.0	3031	3685	2858
30.0	4320	3425	2638	28.0	3031	3599	2762
32.0	4064	3605	2778	25.0	4198	3489	2680
31.0	4064	3530	2715	24.0	4198	3372	2587
29.0	4064	3420	2638	23.0	4198	3291	2530
32.0	4895	3515	2700				
30.5	4895	3402	2620				
29.5	4895	3318	2545				

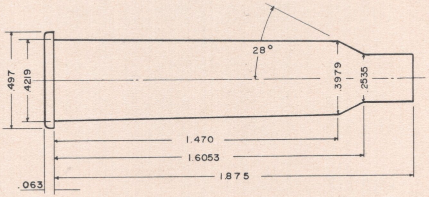
NOTE: Maximum loads listed should be used with caution.

.219 DONALDSON WASP, 55 Grain Speer Bullet—Catalog No. 224-55-6-SP

GRAINS	POWDER NUMBER	MUZZLE VELOCITY	200 YARD VELOCITY	GRAINS	POWDER NUMBER	MUZZLE VELOCITY	200 YARD VELOCITY
31.0	4320	3517	2765	28.5	3031	3558	2800
30.0	4320	3437	2703	27.5	3031	3413	2690
29.5	4320	3375	2660	26.5	3031	3300	2600
30.5	4064	3450	2720	24.5	4198	3348	2640
29.0	4064	3356	2640	23.8	4198	3288	2598
28.0	4064	3211	2528	23.0	4198	3172	2500
32.0	4895	3546	2800				
31.0	4895	3455	2720				
30.0	4895	3260	2570				

NOTE: Maximum loads listed should be used with caution.

THE .219 IMPROVED ZIPPER



The improved zipper is sort of a cousin to the Wasp, except that the case is not shortened. It's simply fire formed by touching off a standard Zipper case in an *improved* chamber. With some lots of brass one can fire form standard Zipper cases and get Improved Zipper cases with little brass loss. With most lots, however, brass loss is very serious, often running as much as eighty per cent.

The Improved Zipper cartridge is really sort of a rimmed .22/250 and about the same ballistics can be obtained for the Improved Zipper as can be obtained with a .22/250.

.219 IMPROVED ZIPPER, 45 Grain Speer Bullet — Catalog No. 224-45-4-SP

GRAINS	POWDER NUMBER	MUZZLE VELOCITY	200 YARD VELOCITY	GRAINS	POWDER NUMBER	MUZZLE VELOCITY	200 YARD VELOCITY
36.0	4895	3883	2800	34.0	3031	3950	2842
35.0	4895	3781	2721	33.0	3031	3878	2795
34.0	4895	3650	2630	32.0	3031	3740	2700
36.5	4320	3883	2800	28.0	4198	3710	2678
35.5	4320	3830	2761	27.0	4198	3630	2620
34.5	4320	3600	2598	26.0	4198	3481	2518
36.0	4064	3983	2878				
35.0	4064	3918	2820				
34.0	4064	3802	2741				

NOTE: Maximum loads listed should be used with caution.

.219 IMPROVED ZIPPER, 50 Grain Speer Bullet — Catalog No. 224-50-6-SP

GRAINS	POWDER NUMBER	MUZZLE VELOCITY	200 YARD VELOCITY	GRAINS	POWDER NUMBER	MUZZLE VELOCITY	200 YARD VELOCITY
35.0	4895	3682	2837	33.0	3031	3792	2918
34.0	4895	3583	2758	32.0	3031	3713	2862
33.0	4895	3442	2645	31.0	3031	3564	2740
35.5	4320	3748	2882	27.0	4198	3467	2667
34.5	4320	3580	2765	26.0	4198	3371	2593
33.5	4320	3445	2655	25.0	4198	3280	2520
35.0	4064	3817	2930				
34.0	4064	3759	2880				
33.0	4064	3680	2825				

NOTE: Maximum loads listed should be used with caution.

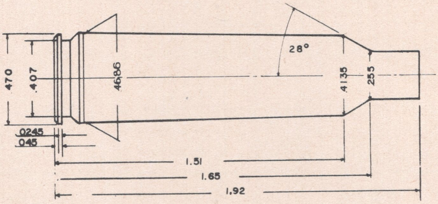
.219 IMPROVED ZIPPER, 55 Grain Speer Bullet — Catalog No. 224-55-6-SP

GRAINS	POWDER NUMBER	MUZZLE VELOCITY	200 YARD VELOCITY	GRAINS	POWDER NUMBER	MUZZLE VELOCITY	200 YARD VELOCITY
34.0	4895	3492	2748	32.0	3031	3540	2790
33.0	4895	3385	2670	31.0	3031	3435	2700
32.0	4895	3250	2560	30.0	3031	3353	2640
35.0	4320	3523	2798	26.5	4198	3293	2598
33.5	4320	3387	2670	25.5	4198	3233	2545
32.5	4320	3333	2623	25.0	4198	3183	2510

34.0	4064	3554	2800
33.0	4064	3507	2775
32.0	4064	3412	2682

NOTE: Maximum loads listed should be used with caution.

THE .22/250 OR "VARMINTER"



The famous .22/250 or varminter has a long history. It was originally designed by Grosvenor Woytkins as the forerunner or prototype of the .220 Swift and is simply the .250/3000 Savage case necked down to .22 with the same 26½ degree shoulder. Chambers vary considerably, however, and the shoulder may be anywhere between 26½ degrees and 30 degrees. The cartridge has considerable case capacity and burns powder cleanly and well. The sharp shoulder case tends to give uniform velocities and it also tends to prevent cases from lengthening and stretching unduly. Most .22/250 rifles are made with a .224" groove diameter.

The .22/250 has probably won more bench rest matches than any other cartridge, including the famous .219 Wasp. It is also probably the most popular of all wildcats and one of the best. Cases are very easy to form, a consideration whenever a wildcat is purchased.

Good accuracy can be obtained with the .22/250 with every sort of a load from one which duplicates the .22 long rifle to one which doesn't miss duplicating the .220 Swift very far.

.22-250 VARMINTER, 45 Grain Speer Bullet — Catalog No. 224-45-4-SP

GRAINS	POWDER NUMBER	MUZZLE VELOCITY	200 YARD VELOCITY	GRAINS	POWDER NUMBER	MUZZLE VELOCITY	200 YARD VELOCITY
40	4320	3900	2810	37	3031	3926	2828
39	4320	3794	2732	36	3031	3815	2746
38	4320	3680	2653	35	3031	3710	2671
39	4064	3940	2838	34	4198	4020	2894
38	4064	3840	2766	33	4198	3902	2810
37	4064	3686	2657	32	4198	3800	2735
40	4895	3915	2820				
39	4895	3820	2751				
38	4895	3740	2692				

NOTE: Maximum loads listed should be used with caution.

.22-250 VARMINTER, 50 Grain Speer Bullet — Catalog No. 224-50-6-SP

GRAINS	POWDER NUMBER	MUZZLE VELOCITY	200 YARD VELOCITY	GRAINS	POWDER NUMBER	MUZZLE VELOCITY	200 YARD VELOCITY
42.0	4350	3649	2805	39.5	4895	3925	3020
40.0	4350	3443	2646	38.5	4895	3855	2960
38.0	4350	3252	2495	37.5	4895	3698	2840
40.0	4320	3900	3000	36.0	3031	3823	2940
39.0	4320	3768	2900	35.0	3031	3725	2862
38.0	4320	3660	2818	34.0	3031	3577	2745
39.0	4064	3962	3029				
38.0	4064	3813	2920				
37.0	4064	3690	2830				

NOTE: Maximum loads listed should be used with caution.

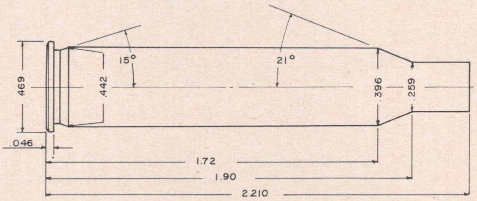
.22-250 VARMINTER, 55 Grain Speer Bullet — Catalog No. 224-55-6-SP

GRAINS	POWDER NUMBER	MUZZLE VELOCITY	200 YARD VELOCITY	GRAINS	POWDER NUMBER	MUZZLE VELOCITY	200 YARD VELOCITY
42.0	4350	3650	2872	38.5	4895	3787	2980
40.0	4350	3470	2730	38.0	4895	3675	2892
38.0	4350	3230	2542	37.5	4895	3610	2842
38.5	4320	3778	2970	35.0	3031	3618	2847
37.5	4320	3675	2892	34.0	3031	3515	2766
36.5	4320	3580	2820	33.0	3031	3420	2691

37.5	4064	3790	2980
35.5	4064	3730	2934
33.5	4064	3455	2720

NOTE: Maximum loads listed should be used with caution.

THE .220 SWIFT



It took American varmint shooters a long time to realize just how terrific a cartridge the .220 Swift was. When the cartridge first came out it received a lot of adverse publicity. Writers said that it jumped pressures unaccountably, that the neck stretched and lengthened, that it was accurate only with full powder loads at velocities of around 4,000 f.p.s. and above. As a matter of fact, time has proved that the Swift has little more tendency to stretch and thicken case necks than any other cartridge, and that the reason that some Swifts did is that early handloaders thought that they had to drive every bullet they shot at from 4,000 f.p.s. or better. Any cartridge tends to lengthen and stretch, if it is used at pressures around 55,000.

Swift factory pressures run high. Along with the .300 Magnum it's the hottest cartridge that Winchester loads. However, the Swift case is a very strong one with a very strong head. If anyone loads the Swift to velocities approaching 4,000 f.p.s. and to pressures of around 55,000 pounds, he must watch his cases closely and trim them and ream them periodically.

However, it is not necessary to load Swifts that hot. Excellent accuracy with the Swift is obtained at velocity levels with the 50 and 55 grs. bullets at between 3,500 f.p.s. and 3,800 f.p.s.

The only American factory rifles for the Swift have been turned out by Winchester — the Model 54 and the Model 70. Both rifles have been superbly accurate arms. Because of the high pressures of the Swift cartridge, Winchester now makes Model 70 rifles with high-chrome barrels to resist erosion. Most Winchester factory Swift rifles are exceedingly accurate, although in some cases the barrels may need rebedding. The Husqvarna Company in Sweden has also brought out a .220 Swift in a Mauser action, and various custom gunsmiths have also built Swifts.

There are various wildcatted forms of the .220 Swift. The Wilson Arrow is a .220 Swift case trimmed and blown out for a sharper shoulder. The .220 Weatherby Rocket, designed by Roy E. Weatherby of South Gate, California, is simply the Swift case blown out with less body taper, more powder capacity, and a sharper shoulder.

A very good conservative load for the Swift, which gives long barrel life and fine accuracy and flat trajectory, is 37 to 37.5 grs. of No. 4064 with a 55 gr. bullet.

.220 SWIFT, 45 Grain Speer Bullet — Catalog No. 224-45-4-SP

GRAINS	POWDER NUMBER	MUZZLE VELOCITY	200 YARD VELOCITY	GRAINS	POWDER NUMBER	MUZZLE VELOCITY	200 YARD VELOCITY
43	4320	3948	2845	39	3031	4021	2892
42	4320	3888	2800	38	3031	3942	2840
41	4320	3795	2732	37	3031	3775	2720
43	4064	4165	3002	34	4198	3882	2796
42	4064	4041	2912	33	4198	3752	2700
41	4064	3880	2795	32	4198	3610	2600
43	4895	4045	2914				
42	4895	3916	2820				
41	4895	3800	2735				

NOTE: Maximum loads listed should be used with caution.

.220 SWIFT, 50 Grain Speer Bullet — Catalog No. 224-50-6-SP

GRAINS	POWDER NUMBER	MUZZLE VELOCITY	200 YARD VELOCITY	GRAINS	POWDER NUMBER	MUZZLE VELOCITY	200 YARD VELOCITY
47.0	4350	3946	3034	42.5	4895	3927	3020
45.0	4350	3810	2927	41.0	4895	3863	2972
43.0	4350	3650	2808	39.0	4895	3682	2829

42.5	4320	3935	3025	38.5	3031	3945	3034
41.0	4320	3895	2992	37.5	3031	3820	2936
39.0	4320	3680	2828	36.5	3031	3725	2865
41.5	4064	4010	3080	40.0	HV 2	3958	3042
40.5	4064	3903	3000	39.0	HV 2	3894	2991
39.5	4064	3787	2912	38.0	HV 2	3822	2937

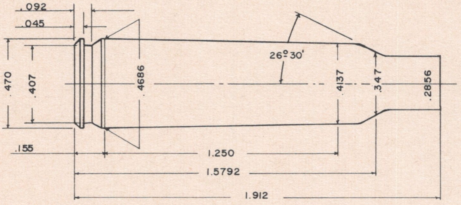
NOTE: Maximum loads listed should be used with caution.

.220 SWIFT, 55 Grain Speer Bullet — Catalog No. 224-55-6-SP

GRAINS	POWDER NUMBER	MUZZLE VELOCITY	200 YARD VELOCITY	GRAINS	POWDER NUMBER	MUZZLE VELOCITY	200 YARD VELOCITY
47.0	4350	3910	3073	42.0	4895	3815	2997
45.0	4350	3752	2946	40.5	4895	3720	2922
43.0	4350	3610	2836	39.5	4895	3588	2820
41.5	4320	3765	2960	36.5	3031	3638	2857
40.0	4320	3692	2900	35.5	3031	3570	2807
38.0	4320	3470	2727	34.5	3031	3485	2740
39.5	4064	3783	2972	38.5	HV 2	3867	3040
38.5	4064	3633	2853	37.5	HV 2	3768	2960
37.5	4064	3512	2760	36.0	HV 2	3687	2896

NOTE: Maximum loads listed should be used with caution.

THE .250/3000 SAVAGE



A long time favorite with gun nuts, the .250/3000 Savage cartridge, is still a very popular one, in spite of the fact that it first came out about 1914. It was designed by the late Charles Newton of Newton cartridge fame. It was an early sharp shoulder job, since the shoulder angle is 26.5 degrees.

The .250/3000 case is simply the .30/06 case shortened and necked down. Overall length is such that it can work through the relatively short Model 99 action. It originally was designed by Newton to drive a 100 gr. bullet in the neighborhood of 2,750-2,800 f.p.s., but the Savage people saw the publicity value of a 3,000 f.p.s. velocity, so they lightened the bullet to 87 grs. in order to get that velocity.

On light animals like deer and antelope, the .250/3000 has always been a good killer, and even larger game like caribou and grizzly have been shot and killed with it. Primarily, however, the .250/3000 is a fine combination varmint and deer cartridge. It is a superb coyote cartridge and a superb deer cartridge for ranges up to about 200 yards.

The .250/3000 is really the first rimless centerfire big game and varmint cartridge. Not only has the Model 99 Savage rifle been chambered for the cartridge ever since it came upon the scene in 1915, but Savage has chambered the Model 1920 and Model 40 and 41 bolt action rifles for it. At present Savage does not make a bolt action rifle for it. Winchester manufactured the Model 54 and later, for a time, Model 70 rifles in .250/3000. Both models had a reputation for giving superb accuracy. Rifles for the .250/3000 cartridge were made by the great Mauser Werke in Germany on the little short, or "K", actions and rifles are built on the same actions by custom gun makers in both the United States and England.

The .250/3000 case will burn a great range of powders nicely and although the .250/3000 has been to some extent superceded by the .257 Roberts, it is still an excellent little cartridge.

.250-3000 SAVAGE, 60 Grain Speer Bullet — Catalog No. 257-60-OS-SP

GRAINS	POWDER NUMBER	MUZZLE VELOCITY	200 YARD VELOCITY	GRAINS	POWDER NUMBER	MUZZLE VELOCITY	200 YARD VELOCITY
42	4320	3596	2440	39	3031	3748	2545
40	4320	3420	2320	37	3031	3533	2400
38	4320	3185	2162	35	3031	3246	2208
41	4064	3623	2460	34	4198	3670	2495
39	4064	3450	2341	32	4198	3400	2305
37	4064	3207	2182	30	4198	3200	2170
42	4895	3582	2437	30	4227	3540	2403
40	4895	3438	2325	28	4227	3340	2265
38	4895	3232	2200	26	4227	3190	2165

NOTE: Maximum loads listed should be used with caution.

.250-3000 SAVAGE, 87 Grain Speer Bullet — Catalog No. 257-87-5-SP

GRAINS	POWDER NUMBER	MUZZLE VELOCITY	200 YARD VELOCITY	GRAINS	POWDER NUMBER	MUZZLE VELOCITY	200 YARD VELOCITY
42	4350	3145	2480	39	4895	3208	2525
40	4350	2946	2325	37	4895	3002	2367
38	4350	2797	2200	35	4895	2839	2238
39	4320	3193	2518	35	3031	3093	2440
37	4320	2998	2360	33	3031	2908	2295
35	4320	2848	2245	31	3031	2758	2172
38	4064	3210	2530	32	4198	3098	2440
36	4064	2980	2365	30	4198	2951	2325
34	4064	2797	2200	28	4198	2792	2200

NOTE: Maximum loads listed should be used with caution.

.250-3000 SAVAGE, 100 Grain Speer Bullet — Catalog No. 257-100-6-SP

GRAINS	POWDER NUMBER	MUZZLE VELOCITY	200 YARD VELOCITY	GRAINS	POWDER NUMBER	MUZZLE VELOCITY	200 YARD VELOCITY
44	4831	2930	2445	37	4064	3088	2580
42	4831	2787	2325	35	4064	2880	2403
40	4831	2653	2218	33	4064	2700	2258
41	4350	3010	2517	33	3031	2820	2357
39	4350	2860	2385	31	3031	2675	2228
37	4350	2683	2241	29	3031	2556	2148
38	4320	3040	2540	37	4895	2935	2447
36	4320	2865	2395	35	4895	2773	2317
34	4320	2693	2245	33	4895	2636	2200

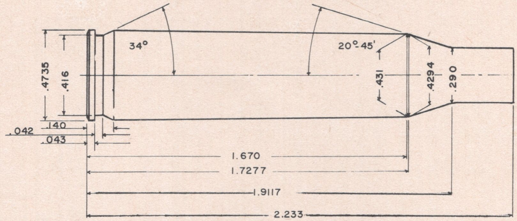
NOTE: Maximum loads listed should be used with caution.

.250-3000 SAVAGE, 120 Grain Speer Bullet — Catalog No. 257-120-6-SP

GRAINS	POWDER NUMBER	MUZZLE VELOCITY	200 YARD VELOCITY	GRAINS	POWDER NUMBER	MUZZLE VELOCITY	200 YARD VELOCITY
44	4831	2843	2438	35	4064	2820	2417
42	4831	2707	2320	33	4064	2600	2223
40	4831	2597	2220	31	4064	2464	2108
40	4350	2810	2403	37	4895	2878	2460
38	4350	2716	2320	35	4895	2716	2320
36	4350	2577	2202	33	4895	2550	2180
37	4320	2842	2438	32	3031	2652	2263
35	4320	2720	2323	30	3031	2503	2142
33	4320	2540	2170	28	3031	2370	2025

NOTE: Maximum loads listed should be used with caution.

THE .257 ROBERTS



One of the most useful cartridges ever designed is the .257 Roberts. It is based on the 7 mm. case, necked to .25 caliber. The cartridge was designed by the late Ned Roberts, a life long woodchuck shooter and varmint rifle enthusiast. The cartridge is not only a first-class varmint cartridge, but it is a most excellent cartridge for any game up to the size of bighorn sheep and mule deer, and in the hands of a good, cool shot, and with the heavier bullets loaded to good velocity, the .257 will take any North American big game with the exception of, let us say, grizzly or Alaskan brown bear or moose in heavier timber. The .257 was originally called the .25 Roberts and appeared in two different versions. The first version was shortened a bit and had a long sloping shoulder, which was presumed in those days to give less pressure. The next version had a case which was not trimmed, and the final version, the one first called the .257 Roberts, was designed by Remington. The shoulder was sharpened and the case left the same length as the 7mm. Mauser.

Most of those who have experimented extensively with the .257 find that they get their best accuracy with a 100 gr. bullet and a muzzle velocity in the neighborhood of 2,900-2,950, a velocity which can be obtained with between 38 and 39 grs. of either No. 4320 or No. 4064. The best bullets purely for big game are the heavier ones weighing from 100 to 120 grs.

The .257 has been made in the Winchester Model 54 and Model 70 and in the Remington Model 30, Model 720, Model 722 and in thousands of custom rifles.

.257 ROBERTS, 60 Grain Speer Bullet — Catalog No. 257-60-OS-SP

GRAINS	POWDER NUMBER	MUZZLE VELOCITY	200 YARD VELOCITY	GRAINS	POWDER NUMBER	MUZZLE VELOCITY	200 YARD VELOCITY
47	4320	3754	2540	41	3031	3740	2538
45	4320	3594	2438	39	3031	3648	2463
43	4320	3456	2340	37	3031	3523	2390
45	4064	3792	2566	43	HV 2	3812	2581
43	4064	3646	2461	41	HV 2	3655	2479
41	4064	3549	2401	39	HV 2	3551	2404
46	4895	3771	2560	36	4198	3718	2520
44	4895	3681	2499	34	4198	3613	2445
42	4895	3591	2437	32	4198	3435	2322

NOTE: Maximum loads listed should be used with caution.

.257 ROBERTS, 87 Grain Speer Bullet — Catalog No. 257-87-5-SP

GRAINS	POWDER NUMBER	MUZZLE VELOCITY	200 YARD VELOCITY	GRAINS	POWDER NUMBER	MUZZLE VELOCITY	200 YARD VELOCITY
47	4350	3316	2603	44	4895	3375	2650
45	4350	3213	2522	42	4895	3305	2600
43	4350	3043	2397	40	4895	3190	2508
44	4320	3385	2663	39	3031	3290	2587
42	4320	3307	2601	37	3031	3165	2495
40	4320	3228	2540	35	3031	3055	2400
43	4064	3355	2638	41	HV 2	3364	2645
41	4064	3237	2542	39	HV 2	3291	2583
39	4064	3138	2461	37	HV 2	3180	2500

NOTE: Maximum loads listed should be used with caution.

.257 ROBERTS, 100 Grain Speer Bullet — Catalog No. 257-100-6-SP

GRAINS	POWDER NUMBER	MUZZLE VELOCITY	200 YARD VELOCITY	GRAINS	POWDER NUMBER	MUZZLE VELOCITY	200 YARD VELOCITY
49	4831	3199	2665	40	4064	3108	2599
47	4831	3032	2531	38	4064	2988	2500
45	4831	2885	2414	36	4064	2861	2392
45	4350	3096	2580	40	4895	3104	2597
43	4350	2975	2482	38	4895	2972	2480
41	4350	2867	2396	36	4895	2844	2379

40	4320	3080	2576
38	4320	2958	2463
36	4320	2820	2357

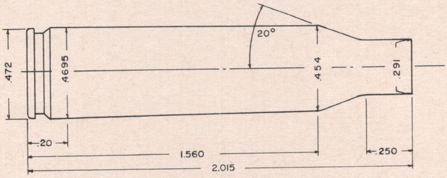
NOTE: Maximum loads listed should be used with caution.

.257 ROBERTS, 120 Grain Speer Bullet — Catalog No. 257-120-6-SP

GRAINS	POWDER NUMBER	MUZZLE VELOCITY	200 YARD VELOCITY	GRAINS	POWDER NUMBER	MUZZLE VELOCITY	200 YARD VELOCITY
45	4831	2863	2439	36	4064	2717	2310
43	4831	2743	2338	34	4064	2594	2203
41	4831	2602	2218	32	4064	2460	2097
42	4350	2807	2385	37	4895	2751	2340
40	4350	2703	2303	35	4895	2624	2238
38	4350	2580	2198	33	4895	2518	2140
37	4320	2736	2322				
35	4320	2622	2232				
33	4320	2491	2120				

NOTE: Maximum loads listed should be used with caution.

THE .25 SOUPER



THE .25 SOUPER is based on the new .308 Winchester cartridge. Cases for it are easily made by merely necking down the .308 case or by reforming the .30-'06 case or any other case having the same head diameter and then trimming to length. The cartridge was developed by P. F. Lambert of Washington, D. C.

who claims better performance for it than possible with the very similar .257 Roberts cartridge. Good 12-inch twist barrels reportedly give minute of angle groups with bullet weights ranging from 60 to 120 grains.

It is an excellent .25 caliber cartridge although it is questionable whether it will become a popular wildcat due to its similarity to the commercially available .257 Roberts. It is considered a good all-around cartridge for bench rest, varmints, and, when loaded with 100 to 120 grain bullets, it is a good long range game cartridge.

.25 SOUPER, 60 Grain Speer Bullet — Catalog No. 257-60-OS-SP

GRAINS	POWDER NUMBER	MUZZLE VELOCITY	200 YARD VELOCITY	GRAINS	POWDER NUMBER	MUZZLE VELOCITY	200 YARD VELOCITY
40.0	4198	3890	2640	50.0	4895	3911	2656
38.5	4198	3767	2558	48.5	4895	3833	2600
37.5	4198	3570	2420	47.0	4895	3715	2530
48.0	4320	3833	2600	47.0	3031	4023	2728
47.0	4320	3755	2542	46.0	3031	3951	2680
46.0	4320	3645	2477	45.0	3031	3831	2598
48.0	4064	3875	2623	45.0	HV 2	3767	2558
47.0	4064	3755	2542	44.0	HV 2	3682	2500
45.5	4064	3647	2479	43.0	HV 2	3600	2440

NOTE: Maximum loads listed should be used with caution.

.25 SOUPER, 87 Grain Speer Bullet — Catalog No. 257-87-5-SP

GRAINS	POWDER NUMBER	MUZZLE VELOCITY	200 YARD VELOCITY	GRAINS	POWDER NUMBER	MUZZLE VELOCITY	200 YARD VELOCITY
37.0	4198	3258	2562	45.0	4895	3347	2643
35.5	4198	3169	2500	43.5	4895	3245	2560
33.5	4198	3055	2403	42.0	4895	3133	2463
44.0	4320	3205	2526	42.5	3031	3373	2655
42.0	4320	3095	2437	41.5	3031	3295	2595
40.0	4320	2972	2340	40.0	3031	3196	2518
44.0	4064	3334	2621	42.0	HV 2	3355	2641
42.5	4064	3238	2545	41.0	HV 2	3270	2578
41.5	4064	3155	2481	39.5	HV 2	3192	2517

NOTE: Maximum loads listed should be used with caution.

.25 SOUPER, 100 Grain Speer Bullet — Catalog No. 257-100-6-SP

GRAINS	POWDER NUMBER	MUZZLE VELOCITY	200 YARD VELOCITY	GRAINS	POWDER NUMBER	MUZZLE VELOCITY	200 YARD VELOCITY
49.0	4831	3150	2630	40.0	4064	3053	2542
48.0	4831	3022	2521	39.0	4064	2958	2463
47.0	4831	2995	2500	37.5	4064	2854	2380
47.0	4350	3160	2640	42.0	4895	3091	2581
44.5	4350	3092	2582	41.0	4895	3008	2518
43.5	4350	2975	2480	39.5	4895	2931	2442
39.0	4320	2912	2433	39.0	3031	3060	2557
37.0	4320	2825	2358	37.5	3031	2981	2487
36.0	4320	2716	2263	35.5	3031	2853	2380

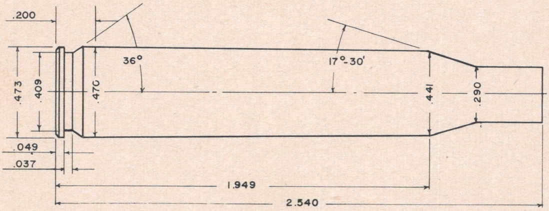
NOTE: Maximum loads listed should be used with caution.

.25 SOUPER, 120 Grain Speer Bullet — Catalog No. 257-120-6-SP

GRAINS	POWDER NUMBER	MUZZLE VELOCITY	200 YARD VELOCITY	GRAINS	POWDER NUMBER	MUZZLE VELOCITY	200 YARD VELOCITY
44.0	4831	2933	2374	36.0	4064	2644	2262
42.5	4831	2873	2458	34.0	4064	2558	2183
42.0	4831	2767	2365	33.0	4064	2477	2119
44.0	4350	2905	2358	38.0	4895	2793	2387
42.5	4350	2797	2387	36.5	4895	2688	2300
41.0	4350	2680	2296	35.0	4895	2630	2247
34.0	4320	2638	2256	37.0	3031	2795	2387
33.0	4320	2500	2140	36.0	3031	2713	2320
32.0	4320	2460	2085	34.5	3031	2640	2260

NOTE: Maximum loads listed should be used with caution.

THE .25 NEIDNER



One of the oldest of all wildcats, the .25 Neidner, did not come into its own until the slow-burning powders like No. 4350 and No. 4831 were developed. The popular name for the cartridge, is as a matter of fact, the .25/06. It has taken many different forms, with shoulders varying from the standard 17 degrees, 30 minute shoulder of the standard .30/06 case and the original .25 Neidner to the sharp 30 and 40 degree shoulders favored by some gunsmiths. However, the original .30/06 shoulder of 17 degrees, 30 minutes, seems to be as good as any.

The cartridge is an excellent one. With the slow burning powders it is not over bore capacity. Barrel life is relatively long and accuracy is good. It is one of the best of the wildcats.

The cartridge has a further advantage in that cases are easy to get. The case itself is easy to form, because all one needs to do is run a .30/06 case through a full length die, chamfer the case mouth and go to it.

The cartridge is probably seen at its best with the fairly heavy bullets varying in weight from 117 to 120 grs. and with barrels of 1-10 twist. However, in spite of its age, much experimenting is still going on with the cartridge. Various twists, types of throats, shoulder slopes, etc., are being tried out. With the lighter bullets the .25/06 is a superb varmint cartridge and with the heavier bullets it should be most excellent as a flat shooting rifle of medium power for big game.

.25 NEIDNER, 87 Grain Speer Bullet — Catalog No. 257-87-5-SP

GRAINS	POWDER NUMBER	MUZZLE VELOCITY	200 YARD VELOCITY	GRAINS	POWDER NUMBER	MUZZLE VELOCITY	200 YARD VELOCITY
61	4831	3518	2770	47	4895	3400	2680
59	4831	3404	2682	45	4895	3336	2621
57	4831	3288	2597	43	4895	3204	2525
56	4350	3448	2719	47	4064	3400	2680
54	4350	3345	2638	45	4064	3299	2598
52	4350	3225	2540	43	4064	3229	2542
47	4320	3390	2667				
45	4320	3307	2608				
43	4320	3209	2527				

NOTE: Maximum loads listed should be used with caution.

.25 NEIDNER, 100 Grain Speer Bullet — Catalog No. 257-100-5-SP

GRAINS	POWDER NUMBER	MUZZLE VELOCITY	200 YARD VELOCITY	GRAINS	POWDER NUMBER	MUZZLE VELOCITY	200 YARD VELOCITY
60	4831	3323	2778	46	4895	3175	2647
58	4831	3245	2717	44	4895	3094	2580
56	4831	3149	2623	42	4895	2972	2462
55	4350	3328	2779	46	4064	3211	2680
53	4350	3188	2661	44	4064	3094	2580
51	4350	3129	2614	42	4064	3038	2527
46	4320	3160	2640				
44	4320	3064	2560				
42	4320	2965	2479				

NOTE: Maximum loads listed should be used with caution.

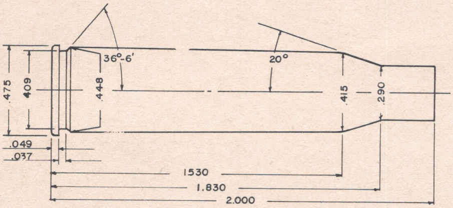
.25 NEIDNER, 120 Grain Speer Bullet — Catalog No. 257-120-5-SP

GRAINS	POWDER NUMBER	MUZZLE VELOCITY	200 YARD VELOCITY	GRAINS	POWDER NUMBER	MUZZLE VELOCITY	200 YARD VELOCITY
57	4831	3101	2646	45	4895	2937	2504
55	4831	3038	2592	43	4895	2807	2402
53	4831	2936	2503	41	4895	2741	2340
52	4350	3042	2600	44	4064	2935	2503
50	4350	2935	2503	42	4064	2823	2416
48	4350	2825	2418	40	4064	2722	2321

45	4320	2902	2481	
43	4320	2805	2400	
41	4320	2720	2322	

NOTE: Maximum loads listed should be used with caution.

THE 6.5 mm JAPANESE ARISAKA



THIS IS THE service cartridge used by the Japanese during World War II. The 138 grain bullet used developed about 2400 foot-seconds in the longer barreled rifles at estimated pressures of 35,000 pounds. It is a semi-rimmed cartridge very similar to the .220 Swift cartridge. Handloaders may obtain cases by forming .220 Swift cases in a 6.5 Arisaka full-length resizing die, trimming to proper length and *fire-forming* them in a 6.5 Arisaka rifle. The Swift case is approximately .006" smaller near the head and a slight bulge may be present after fire forming.

The 6.5 mm Arisaka rifle is often referred to as the ".25 Jap" when it is actually a .256" caliber rifle which is supposed to have a groove diameter of .263". However, many of them will have groove diameters running as high as .272" which accounts for the fact that many of them are very inaccurate, especially the carbines with 18-inch barrels. There are many thousands of these rifles in this country and many of them are being handloaded in spite of the fact many gun authorities have declared them unsafe and useful only as a wall decoration.

(**NOTE**: There are seemingly inconsistent velocities shown for the 6.5 mm Jap cartridge (below) compared to the 6.5 mm x .257 Roberts cartridge. In some instances, higher velocities are shown for the 6.5

Jap even though it is the smaller cartridge of the two. The difference is due to the Jap rifle used in our tests having an oversize barrel 30 inches long compared to a standard .263" barrel 24 inches long for the 6.5 X Roberts. If the following loads are to be used in a 6.5 Jap rifle with a groove diameter of less than .267", the maximum loads listed are likely to show excessive pressures and should be approached with extreme caution. If the groove diameter is .267" or over, and the barrel has been shortened to 22" or 24", the velocities for loads with No. 4831 or No. 4350 will drop approximately 200 foot-seconds from those listed.)

6.5 MM JAP ARISAKA, 87 Grain Speer Bullet — Catalog No. 263-87-5-SP

GRAINS	POWDER NUMBER	MUZZLE VELOCITY	200 YARD VELOCITY	GRAINS	POWDER NUMBER	MUZZLE VELOCITY	200 YARD VELOCITY
41	4320	3305	2596	38	3031	3288	2580
39	4320	3203	2516	36	3031	3137	2458
37	4320	2995	2342	33	3031	3040	2381
40	4064	3342	2620	40	HV 2	3333	2610
38	4064	3182	2498	38	HV 2	3170	2481
36	4064	3005	2358	36	HV 2	2996	2343
41	4895	3386	2659	34	4198	3303	2591
39	4895	3260	2578	32	4198	3196	2500
37	4895	3105	2438	30	4198	3035	2378

NOTE: Maximum loads listed should be used with caution.

6.5 MM JAP ARISAKA, 120 Grain Speer Bullet — Catalog No. 263-120-6-SP

GRAINS	POWDER NUMBER	MUZZLE VELOCITY	200 YARD VELOCITY	GRAINS	POWDER NUMBER	MUZZLE VELOCITY	200 YARD VELOCITY
38	4320	2860	2400	35	3031	2823	2371
36	4320	2720	2281	33	3031	2709	2277
34	4320	2570	2158	31	3031	2571	2160
38	4064	2907	2440	36	HV 2	2856	2396
36	4064	2775	2322	34	HV 2	2699	2261
34	4064	2658	2223	32	HV 2	2570	2158
38	4895	2910	2442	41	4350	2815	2360
36	4895	2783	2339	39	4350	2642	2219
34	4895	2587	2172	37	4350	2505	2100

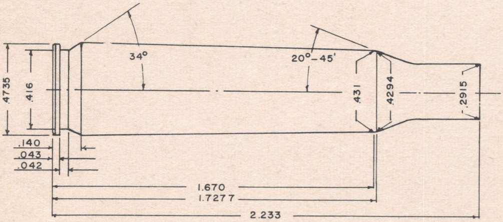
NOTE: Maximum loads listed should be used with caution.

6.5 MM JAP ARISAKA, 140 Grain Speer Bullet — Catalog No. 263-140-6-SP

GRAINS	POWDER NUMBER	MUZZLE VELOCITY	200 YARD VELOCITY	GRAINS	POWDER NUMBER	MUZZLE VELOCITY	200 YARD VELOCITY
41	4831	2565	2203	35	4064	2652	2280
39	4831	2465	2120	33	4064	2540	2182
37	4831	2325	2000	31	4064	2427	2087
41	4350	2736	2346	36	4895	2637	2263
39	4350	2630	2260	34	4895	2530	2177
37	4350	2558	2198	32	4895	2410	2071
36	4320	2625	2260				
34	4320	2525	2177				
32	4320	2375	2041				

NOTE: Maximum loads listed should be used with caution.

THE 6.5 mm x .257 ROBERTS



THIS IS A wildcat cartridge, designed to simplify the ammunition problem with the 6.5 Arisaka. Tens of thousands of 6.5 Arisakas were brought back from the Pacific theatre after the war, but no ammunition was available. Gunsmiths then rechambered to take the .257 case with 6.5 bullets.

THE 6.5 x 57 MAUSER

ONE OF THE earliest of all rimless cartridges, the 6.5 x 57, was the original cartridge for the 6.5 mm Portuguese. It has never been widely used. Some German sporting rifles were made up in that caliber, but although the original Mauser Werke made many rifles for the Portuguese government, it never turned out sporters in that caliber.

In wildcat form of 7 mm x 57 cases necked to 6.5, the 6.5 x 57 is now enjoying considerable popularity in this country as a free rifle cartridge because of accurate bullets available for it and because of light recoil.

6.5 MM x 257 ROBERTS — 6.5 MM x 57 RIMLESS
87 Grain Speer Bullet — Catalog No. 263-87-5-SP

GRAINS	POWDER NUMBER	MUZZLE VELOCITY	200 YARD VELOCITY	GRAINS	POWDER NUMBER	MUZZLE VELOCITY	200 YARD VELOCITY
52	4350	3235	2536	47	4895	3250	2548
50	4350	3082	2420	45	4895	3128	2454
48	4350	3013	2362	43	4895	2975	2334
50	4320	3450	2708	44	3031	3319	2602
48	4320	3303	2592	42	3031	3195	2506
46	4320	3157	2476	40	3031	3078	2414
45	4064	3190	2502	40	4198	3227	2533
43	4064	3081	2418	38	4198	3109	2439
41	4064	3010	2360	36	4198	3037	2380

NOTE: Maximum loads listed should be used with caution.

6.5 MM x 257 ROBERTS — 6.5 MM x 57 RIMLESS
120 Grain Speer Bullet — Catalog No. 263-120-6-SP

GRAINS	POWDER NUMBER	MUZZLE VELOCITY	200 YARD VELOCITY	GRAINS	POWDER NUMBER	MUZZLE VELOCITY	200 YARD VELOCITY
49	4831	2773	2326	39	4064	2672	2241
47	4831	2633	2210	37	4064	2583	2167
45	4831	2512	2100	35	4064	2477	2078
46	4350	2755	2312	39	4895	2665	2235
44	4350	2645	2220	37	4895	2575	2161
42	4350	2563	2152	35	4895	2447	2052
41	4320	2726	2287	37	3031	2638	2212
39	4320	2618	2195	35	3031	2543	2135
37	4320	2531	2122	33	3031	2425	2035

NOTE: Maximum loads listed should be used with caution.

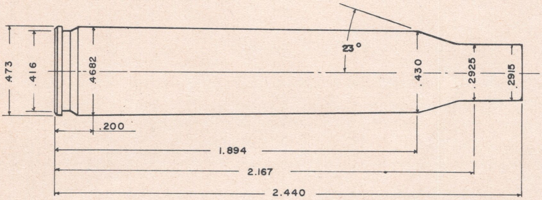
6.5 x 57 MAUSER — 6.5 MM X ROBERTS
140 Grain Speer Bullet — Catalog No. 263-140-6-SP

GRAINS	POWDER NUMBER	MUZZLE VELOCITY	200 YARD VELOCITY	GRAINS	POWDER NUMBER	MUZZLE VELOCITY	200 YARD VELOCITY
47	4831	2583	2220	38	4064	2505	2153
45	4831	2495	2145	36	4064	2389	2043
43	4831	2367	2033	34	4064	2288	1966
43	4350	2537	2180	38	4895	2509	2150
41	4350	2398	2060	36	4895	2385	2041
39	4350	2333	2005	34	4895	2273	1953

39	4320	2505	2153	36	3031	2495	2145
37	4320	2413	2072	34	3031	2367	2033
35	4320	2314	1988	32	3031	2280	1960

NOTE: Maximum loads listed should be used with caution.

THE .256 NEWTON



This cartridge, the .256 Newton, was the most popular of the cartridges designed prior to the first World War by the late Charles Newton and bearing his name. Newton also designed the .250/3000 Savage and the .22 Savage Hi-Power.

According to Newton literature, the .256 Newton was dynamite on any North American big game animal. Newton also claimed a velocity of 3,000 f.p.s. with the 140 gr. bullet and a velocity of around 3,100 with the 129 gr. bullet. Those who chronographed Newton-loaded ammunition at that time say that the velocity figures were exaggerated and the cartridge, as loaded by Western, gave the 129 gr. bullet a velocity of about 2,850. With the slower burning powders of today, the .256 Newton is quite a good one, but it isn't as good a cartridge as the .270 Winchester, which in turn, is probably an offspring of the Newton. Like the .270 WCF, the .256 Newton is based on a necked-down .30/06 case, but the Newton case is shortened a bit, whereas the .270 case is actually slightly longer than the .30/06.

.256 NEWTON, 87 Grain Speer Bullet — Catalog No. 263-87-5-SP

GRAINS	POWDER NUMBER	MUZZLE VELOCITY	200 YARD VELOCITY	GRAINS	POWDER NUMBER	MUZZLE VELOCITY	200 YARD VELOCITY
60.0	4831	3135	2456	54.0	4064	3556	2783
58.0	4831	3005	2359	52.0	4064	3415	2678
56.5	4831	2940	2303	50.0	4064	3252	2545
59.0	4350	3345	2622	55.5	4895	3534	2767
57.0	4350	3214	2520	53.5	4895	3390	2660
55.5	4350	3075	2405	52.0	4895	3295	2580
56.0	4320	3567	2798	51.0	3031	3476	2720
54.0	4320	3436	2691	49.0	3031	3366	2640
52.0	4320	3298	2582	47.0	3031	3212	2520

NOTE: Maximum loads listed should be used with caution.

.256 NEWTON, 120 Grain Speer Bullet — Catalog No. 263-120-6-SP

GRAINS	POWDER NUMBER	MUZZLE VELOCITY	200 YARD VELOCITY	GRAINS	POWDER NUMBER	MUZZLE VELOCITY	200 YARD VELOCITY
59.0	4831	3065	2575	50.0	4064	3010	2525
57.0	4831	2938	2460	48.0	4064	2892	2422
55.0	4831	2875	2410	46.0	4064	2812	2360
56.0	4350	3065	2575	48.5	4895	2845	2387
54.5	4350	2955	2479	47.0	4895	2767	2322
53.0	4350	2845	2390	45.0	4895	2691	2260
51.0	4320	3030	2542	47.0	3031	2965	2485
49.0	4320	2915	2441	45.0	3031	2863	2407
47.0	4320	2791	2342	43.0	3031	2758	2310

NOTE: Maximum loads listed should be used with caution.

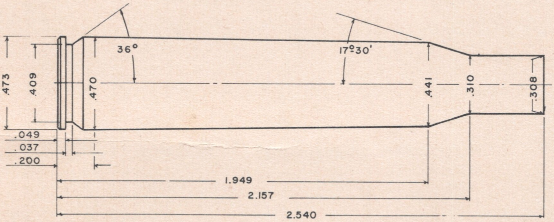
.256 NEWTON, 140 Grain Speer Bullet — Catalog No. 263-140-6-SP

GRAINS	POWDER NUMBER	MUZZLE VELOCITY	200 YARD VELOCITY	GRAINS	POWDER NUMBER	MUZZLE VELOCITY	200 YARD VELOCITY
58.0	4831	2952	2537	47.0	4064	2761	2365
56.0	4831	2845	2442	45.0	4064	2663	2285
54.0	4831	2764	2368	43.0	4064	2575	2210
53.0	4350	2853	2449	47.5	4895	2733	2361
51.5	4350	2758	2362	45.0	4895	2604	2240
50.5	4350	2665	2292	43.0	4895	2526	2167

48.0	4320	2792	2379	45.0	3031	2764	2368
46.0	4320	2674	2298	43.0	3031	2645	2278
44.0	4320	2582	2220	41.0	3031	2562	2201

NOTE: Maximum loads listed should be used with caution.

THE .270 WINCHESTER



ONE OF THE all-time greats, the .270 Winchester, is one of the world's greatest long-range, flat shooting mountain cartridges. It originally came out in 1925 in the then brand-new Model 54 Winchester rifle. The first factory cartridges were loaded with 130 gr. bullets to an advertised velocity of 3,160 f.p.s. The original powder was No. 15½. In later years factories have brought out .270 cartridges at a muzzle velocity of 2,770. With a 100 gr. bullet the report is quite loud for a varmint cartridge, and the muzzle blast keeps many from doing their best shooting with it. With a 150 gr. factory load, the full power of the cartridge is not developed because the 150 gr. load is a special combination for deer hunting in brush, where less meat destruction and bullet deflection is wanted.

Because of the large case capacity as compared to the bore, the slow burning powders have always worked best for the .270. Best results with both the 130 and 150 gr. bullets are obtained with No. 4350 and No. 4831.

The 130 gr. bullets have been used in the .270 on all North American big game, including moose and grizzlies. The .270 with a 130 gr. bullet was the favorite cartridge for the Alaskan writer and big game guide, Russell Anabel. It is also the favorite cartridge of Col. Townsend Whelen, the late Monroe Goode. Jack O'Connor has written extensively on the .270 and has killed all North American big game with it, except Alaska brown bear. He has also used the .270 on African antelope.

In spite of the popularity of the 130 gr. bullet, probably the best medicine in the .270 for the handloader is the 150 gr. Speer bullet pushed along in the neighborhood of 3,000 f.p.s. with 58 or 59 grs. of No. 4831. At over 400 yards this excellently shaped bullet of superb sectional density will shoot flatter than will any 130 gr. bullet and it will arrive at 400 yards with more energy.

The 150 gr. SPEER bullet has been proved to be entirely adequate for long range shooting at elk and, as a matter of fact, is a favorite missile with Idaho's expert elk hunters.

With the 100 gr. SPEER bullet excellent accuracy is usually obtained, particularly in rifles with special barrels with 1-12 twist. With the 150 gr. bullet a 1-10 twist gives the best accuracy.

The .270 cartridge is widely reloaded and, counting custom made rifles, probably more .270 rifles are now being sold in the United States than rifles of any other caliber, even including the famous .30/06.

The .270 is precisely like the .30/06 and headspace gauges between the two cartridges are interchangeable. However, the .270 case is about .050 inch longer. Using .30/06 cases full length sized to .270, tends to increase the rate of throat erosion.

.270 WINCHESTER, 100 Grain Speer Bullet— Catalog No. 277-100-6-SP

GRAINS	POWDER NUMBER	MUZZLE VELOCITY	200 YARD VELOCITY	GRAINS	POWDER NUMBER	MUZZLE VELOCITY	200 YARD VELOCITY
60	4350	3464	2785	53	4895	3511	2822
58	4350	3382	2721	51	4895	3418	2745
56	4350	3274	2639	49	4895	3345	2697
53	4320	3465	2785	51	HV 2	3492	2805
51	4320	3405	2740	49	HV 2	3396	2722
49	4320	3345	2697	47	HV 2	3310	2660
53	4064	3534	2846	49	3031	3455	2780
51	4064	3410	2741	47	3031	3370	2715
49	4064	3322	2672	45	3031	3310	2660

NOTE: Maximum loads listed should be used with caution.

.270 WINCHESTER, 130 Grain Speer Bullet — Catalog No. 277-130-6-SP

GRAINS	POWDER NUMBER	MUZZLE VELOCITY	200 YARD VELOCITY	GRAINS	POWDER NUMBER	MUZZLE VELOCITY	200 YARD VELOCITY
60	4831	3180	2648	50	4064	3121	2600
58	4831	3098	2574	48	4064	3028	2520
56	4831	2981	2477	46	4064	2972	2472
57	4350	3171	2640	51	4895	3129	2605
55	4350	3064	2590	49	4895	3029	2560
53	4350	2938	2351	47	4895	2927	2445
51	4320	3171	2640	48	3031	3123	2600
49	4320	3047	2533	46	3031	3014	2508
47	4320	2968	2465	44	3031	2952	2457

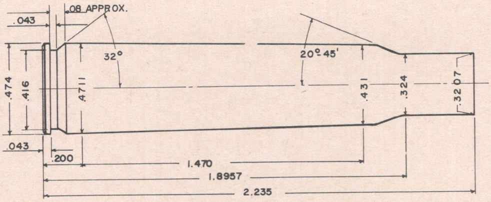
NOTE: Maximum loads listed should be used with caution.

.270 WINCHESTER, 150 Grain Speer Bullet — Catalog No. 277-150-6-SP

GRAINS	POWDER NUMBER	MUZZLE VELOCITY	200 YARD VELOCITY	GRAINS	POWDER NUMBER	MUZZLE VELOCITY	200 YARD VELOCITY
59	4831	3023	2621	47	4064	2870	2482
57	4831	2911	2524	45	4064	2766	2400
55	4831	2819	2444	43	4064	2682	2322
56	4350	3010	2592	48	4895	2880	2498
54	4350	2903	2505	46	4895	2785	2418
52	4350	2729	2355	44	4895	2692	2332
48	4320	2895	2505				
46	4320	2794	2420				
44	4320	2712	2345				

NOTE: Maximum loads listed should be used with caution.

THE 7 mm MAUSER



A CARTRIDGE which refuses to die is the 7 mm. Mauser, or 7 x 57, as it is known. The cartridge is a very old one. It is one of the original Mauser cartridges and came out in the early 1890's, right after the 8 x 57 and the 6.5 x 57. The cartridge was originally designed for the Spanish government and the first Mauser rifle to be chambered for it in quantity was the Model 1893. At the present time no factory rifle is being produced in the United States for the 7 mm. cartridge, but formerly Winchester made the Model 54 and Model 70 bolt action rifles for it, and Remington made the Model 30. Large custom makers, like Neidner, Griffin & Howe, and Sedgley, have turned out many hundreds of 7 mm's and the rifle is still a very popular one with custom gun builders. In the past cartridges have been loaded by the various factories with bullets ranging in weight from 139 to 150 and 175 grs. Now, however, the only factory load is that with the 175 gr. bullet. However, the hand loader has considerable variety of bullets at his disposal, as can be seen with the accompanying ballistics. The 130 gr. bullet is an excellent varmint bullet and the 145 gr. bullet a very good one for deer, sheep, antelope and game of similar size. For an all-around bullet the 160 gr. is hard to beat.

The 7 mm. combines fine accuracy and good killing power with light recoil. In the hands of a good shot it can be used very nicely on any North American big game, with the possible exception of Alaska brown bear. Since the recoil is noticeably less than that of the .30/06 and .270, it is an ideal cartridge for the recoil sensitive man or woman. The 7 mm. is ideal for a light mountain rifle or a light saddle rifle, because a light 7 mm. can be built to weigh at least a pound under the weight of a .270 or .30/06 without having objectionable recoil.

At the present time, the handloader should take great care with the 7 mm., because case capacity varies and cases differ considerably. Remington cases are a good deal heavier than those made by Western and Winchester and give much higher pressures with the same loads.

7 x 57 MAUSER, 130 Grain Speer Bullet — Catalog No. 284-130-6-SP

GRAINS	POWDER NUMBER	MUZZLE VELOCITY	200 YARD VELOCITY	GRAINS	POWDER NUMBER	MUZZLE VELOCITY	200 YARD VELOCITY
55	4831	2947	2460	46	4064	2980	2485
53	4831	2893	2412	44	4064	2868	2392
51	4831	2700	2252	42	4064	2772	2312
53	4350	3012	2513	47	4895	2992	2494
51	4350	2909	2426	45	4895	2892	2411
49	4350	2803	2340	43	4895	2822	2355
47	4320	3014	2514	44	3031	2968	2476
45	4320	2912	2429	42	3031	2867	2391
43	4320	2815	2347	40	3031	2769	2310

NOTE: Maximum loads listed should be used with caution.

7 x 57 MAUSER, 145 Grain Speer Bullet — Catalog No. 284-145-6-SP

GRAINS	POWDER NUMBER	MUZZLE VELOCITY	200 YARD VELOCITY	GRAINS	POWDER NUMBER	MUZZLE VELOCITY	200 YARD VELOCITY
54	4831	2890	2440	45	4064	2857	2412
52	4831	2782	2350	43	4064	2767	2338
50	4831	2626	2218	41	4064	2675	2260
51	4350	2871	2422	46	4895	2882	2433
49	4350	2755	2326	44	4895	2783	2350
47	4350	2661	2246	42	4895	2699	2279
46	4320	2885	2436				
44	4320	2787	2353				
42	4320	2683	2267				

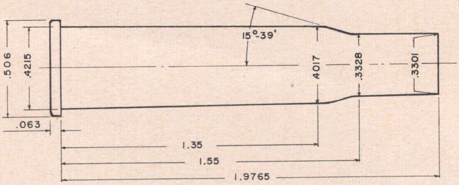
NOTE: Maximum loads listed should be used with caution.

7 x 57 MAUSER, 160 Grain Speer Bullet — Catalog No. 284-160-6-SP

GRAINS	POWDER NUMBER	MUZZLE VELOCITY	200 YARD VELOCITY
53	4831	2761	2372
51	4831	2646	2275
49	4831	2556	2196
49	4350	2775	2385
47	4350	2665	2292
45	4350	2518	2162
45	4320	2755	2366
43	4320	2672	2294
41	4320	2577	2213
44	4064	2738	2352
42	4064	2665	2292
40	4064	2568	2207
44	4895	2727	2345
42	4895	2625	2255
40	4895	2544	2186

NOTE: Maximum loads listed should be used with caution.

THE 30/30 WINCHESTER



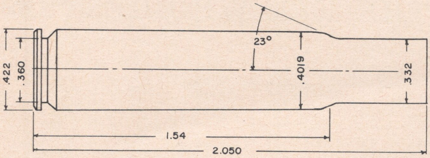
THIS IS TRULY an epoch making cartridge, the first genuinely popular high velocity smokeless centerfire cartridge ever developed in North America. The cartridge came out just about sixty years ago for the Model 94 Winchester rifle. Since that time .30/30 rifles have been made by not only Winchester, but Marlin, Savage, Stevens. .30/30 ammunition has been sold where ever powder is burned and the cartridge is loaded not only in the United States, but in England, and it has been loaded on the European continent. The .30/30 cartridge has been used in German three-barrel guns or "drillings" and in Europe the cartridge is known as the 7.62 x 51-R.

In spite of the enormous popularity of the .30/30 it is not widely reloaded. It is the cartridge of the woodsman and the once-a-year deer hunter and not a cartridge for the handloader and rifle enthusiast.

Because of the relatively small case capacity, factory ballistics cannot be greatly improved. It is a medium pressure job, as pressures should be held to under 40,000 pounds per square inch with Winchester and Marlin lever action rifles. With bullets of good weight very high velocity cannot be obtained, and for that reason there is not much advantage in loading bullets weighing less than 150 grs. Because of the tubular magazines, round or flat-nosed bullets should be used, as there is always the possibility that a spitzer bullet might fire the cartridge ahead of it in the tubular magazines.

In a good, stiff single shot or bolt action, the .30/30 is a surprisingly accurate cartridge.

THE .30 REMINGTON



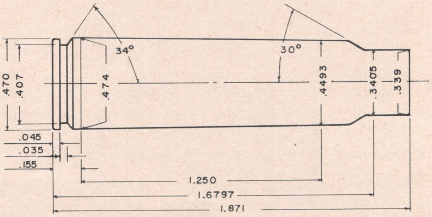
WHEREAS THE OLD .30/30 WCF cartridge is as lively as ever, the .30 Remington is on its last legs. It is simply a rimless version of the .30/30 and has identical ballistics and will take identical loads. The .30 Remington was brought out for the old Model 8 autoloader and Model 14 pump action rifles. Its sister cartridges are the .25 Remington, Remington's answer to the Winchester .25/35, and the .32 Remington rimless, Remington's answer to the Winchester .32 Special. All of those cartridges in that series are on the way out. At one time Stevens made lever action rifles for the Remington series of cartridges. An ancient clunk called the Standard, made prior to the 1st World War, was also chambered for the Remington series. At one time Remington chambered the good Model 30 bolt action rifles for these relatively trifling cartridges. Nowadays the only cartridge of the Remington rimless series which is still alive and kicking is the .35 Remington, but it is based on a shortened .30/06 case and has a standard size .30/06 and 8 mm. head.

30-30 WCF, .30 REMINGTON, 150 Grain Bullet — Cat. No. 3085-150-WR-SP

GRAINS	POWDER NUMBER	MUZZLE VELOCITY	200 YARD VELOCITY	GRAINS	POWDER NUMBER	MUZZLE VELOCITY	200 YARD VELOCITY
38	4320	2399	1727	34	3031	2407	1734
36	4320	2264	1632	32	3031	2259	1625
34	4320	2153	1550	30	3031	2162	1558
37	4064	2415	1739	34	HV 2	2372	1710
35	4064	2295	1650	32	HV 2	2223	1602
33	4064	2155	1550	30	HV 2	2089	1505
38	4895	2374	1708	29	4198	2372	1710
36	4895	2234	1610	27	4198	2285	1646
34	4895	2158	1553	25	4198	2147	1547

NOTE: Maximum loads listed should be used with caution.

THE .300 SAVAGE



THE .300 SAVAGE cartridge is one of the most widely used and popular cartridges in North America. The .300 Savage rifles are not only made in the original Model 99 by Savage, a combination which has been popular ever since the early 1920's when the .300 Savage first appeared, but .300 Savage bolt action rifles have been made by Winchester and are still made in the Model 722 by Remington. In addition Remington chambers the Model 760 pump action rifle for the .300 Savage and in the past made the Model 81 semi-automatic rifle for that cartridge.

Back in the 1920's Savage made the original Model 1920 rifle in .300 Savage as well as in .25/3000 and later chambered the rather funny looking Model 40 and 41 bolt action rifle for that cartridge, as well as for the .30/06 and the .250/3000.

It is possible to get a velocity in the neighborhood of 2,700 f.p.s. with suitable powders in the .300 Savage. That gives a cartridge about as powerful as the original loading of the 150 gr. bullet in the .30/06, the loading which made the .30/06 rifles fame and fortune.

If a man can hold right, he can still kill just about anything in North America with the .300 Savage.

For many reasons, though, the .300 Savage cartridge has never been widely reloaded. For one thing it is not a particularly good cartridge to reload in any rifle. The shoulder is quite sharp and the case capacity is limited. For another thing, one has to watch his pressures with the Model 99 Savage, because if he does not, he must full length size his case each time, something which the sharp shoulder makes difficult in the .300 Savage. Perhaps the most important thing of all, however, is that the majority of handloaders are not .300 Savage users and the majority of .300 Savage users are not handloaders. The handloader tends to be a bolt action man, whereas most of the .300 Savage users like the lever action and it was around the lever action that the popularity of the cartridge was built.

.300 SAVAGE, 110 Grain Speer Bullet — Catalog No. 3085-110-OS-SP

GRAINS	POWDER NUMBER	MUZZLE VELOCITY	200 YARD VELOCITY	GRAINS	POWDER NUMBER	MUZZLE VELOCITY	200 YARD VELOCITY
43	HV 2	2926	2220	40	4198	3145	2385
41	HV 2	2802	2120	38	4198	2995	2270
39	HV 2	2752	2080	36	4198	2815	2135
45	3031	2950	2235				
43	3031	2827	2142				
41	3031	2746	2082				

NOTE: Maximum loads listed should be used with caution.

.300 SAVAGE, 150 Grain Speer Bullet
Catalog No. 3085-150-6-SP, 3085-150-GP-SP

GRAINS	POWDER NUMBER	MUZZLE VELOCITY	200 YARD VELOCITY	GRAINS	POWDER NUMBER	MUZZLE VELOCITY	200 YARD VELOCITY
45	4320	2660	2190	42	3031	2712	2240
43	4320	2568	2120	40	3031	2596	2140
41	4320	2417	2000	38	3031	2428	2010

44	4064	2688	2220	39	HV 2	2632	2170
42	4064	2568	2120	37	HV 2	2570	2120
40	4064	2420	2000	35	HV 2	2436	2010
43	4895	2559	2110	36	4198	2655	2190
41	4895	2445	2020	34	4198	2497	2060
39	4895	2268	1870	32	4198	2342	1930

NOTE: Maximum loads listed should be used with caution.

.300 SAVAGE, 180 Grain Speer Bullet
Catalog No. 3085-180-6-SP, 3085-180-GP-SP

GRAINS	POWDER NUMBER	MUZZLE VELOCITY	200 YARD VELOCITY	GRAINS	POWDER NUMBER	MUZZLE VELOCITY	200 YARD VELOCITY
43	4320	2441	2090	42	4895	2397	2050
41	4320	2353	2010	40	4895	2250	1920
39	4320	2213	1890	38	4895	2132	1820
42	4064	2450	2090	39	3031	2421	2070
40	4064	2333	2000	37	3031	2317	1980
38	4064	2261	1930	35	3031	2142	1830

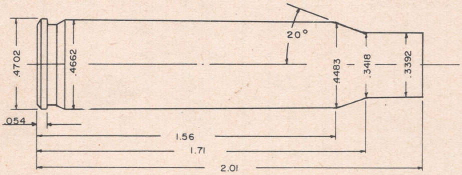
NOTE: Maximum loads listed should be used with caution.

.300 SAVAGE, 200 Grain Speer Bullet
Catalog No. 3085-200-6-SP, 3085-200-GP-SP

GRAINS	POWDER NUMBER	MUZZLE VELOCITY	200 YARD VELOCITY	GRAINS	POWDER NUMBER	MUZZLE VELOCITY	200 YARD VELOCITY
43	4350	2174	1890	39	4064	2250	1960
41	4350	2054	1780	37	4064	2192	1910
39	4350	1947	1690	35	4064	2076	1810
40	4320	2252	1960				
38	4320	2172	1890				
36	4320	2052	1780				

NOTE: Maximum loads listed should be used with caution.

THE .308 WINCHESTER



An experimental army cartridge known as the T-65 is precisely the same thing as the cartridge known as the .308 Winchester. If the T-65 becomes the U. S. service cartridge, it will become an exceedingly popular one. It was a shrewd publicity move for Winchester to market the .308 Winchester.

The .308 WCF case is a very strong one, made to function in automatic arms and to take the violent handling which any cartridge fired in a semi-automatic gets. The cartridge is in case capacity about half-way between a .300 Savage and a .30/06. At the factory it gets its excellent ballistics — ballistics comparable to those of the .30/06 — by the use of a special Western Cartridge Company-made ball powder. Nothing else will do quite as well. However, as can be seen by the accompanying tables, some very good loads can be worked up with ordinary commercially available powders for the .308.

.308 WINCHESTER, 110 Grain Speer Bullet — Catalog No. 3085-110-OS-SP

GRAINS	POWDER NUMBER	MUZZLE VELOCITY	200 YARD VELOCITY	GRAINS	POWDER NUMBER	MUZZLE VELOCITY	200 YARD VELOCITY
51	4895	3118	2360	50	HV 2	3200	2420
49	4895	3022	2290	48	HV 2	3098	2350
47	4895	2819	2140	46	HV 2	2978	2260
48	3031	3195	2416	45	4198	3327	2520
46	3031	3102	2350	43	4198	3202	2421
44	3031	2927	2220	41	4198	3040	2300

NOTE: Maximum loads listed should be used with caution.

.308 WINCHESTER, 150 Grain Speer Bullet
Catalog No. 3085-150-GP-SP, 3085-150-6-SP

GRAINS	POWDER NUMBER	MUZZLE VELOCITY	200 YARD VELOCITY	GRAINS	POWDER NUMBER	MUZZLE VELOCITY	200 YARD VELOCITY
49	4320	2898	2390	45	3031	2855	2360
47	4320	2766	2280	43	3031	2657	2190
45	4320	2628	2170	41	3031	2536	2090
46	4064	2812	2320	45	HV 2	2798	2310
44	4064	2705	2230	43	HV 2	2662	2200
42	4064	2542	2100	41	HV 2	2541	2100
47	4895	2733	2250	38	4198	2643	2180
45	4895	2572	2120	36	4198	2552	2110
43	4895	2425	2000	34	4198	2417	1990

NOTE: Maximum loads listed should be used with caution.

.308 WINCHESTER, 180 Grain Speer Bullet — Catalog No. 3085-180-6-SP

GRAINS	POWDER NUMBER	MUZZLE VELOCITY	200 YARD VELOCITY	GRAINS	POWDER NUMBER	MUZZLE VELOCITY	200 YARD VELOCITY
50	4350	2511	2150	43	4895	2417	2060
48	4350	2427	2080	41	4895	2271	1940
46	4350	2321	1980	39	4895	2158	1850
45	4320	2545	2180	40	3031	2403	2052
43	4320	2398	2050	38	3031	2283	1950
41	4320	2258	1930	36	3031	2175	1860
43	4064	2620 2503	2140				
41	4064	2362	2020				
39	4064	2251	1920				

42

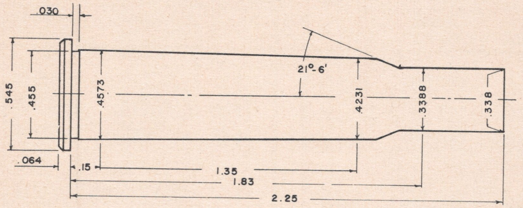
NOTE: Maximum loads listed should be used with caution.

.308 WINCHESTER, 200 Grain Speer Bullet
Catalog No. 3085-200-6-SP, 3085-200-GP-SP

GRAINS	POWDER NUMBER	MUZZLE VELOCITY	200 YARD VELOCITY	GRAINS	POWDER NUMBER	MUZZLE VELOCITY	200 YARD VELOCITY
48	4831	2107	1830	43	4320	2360	2060
46	4831	2012	1750	41	4320	2245	1950
44	4831	1925	1680	39	4320	2112	1833
47	4350	2306	2010	39	4064	2200	1920
45	4350	2232	1940	37	4064	2057	1790
43	4350	2120	1840	35	4064	1915	1670

NOTE: Maximum loads listed should be used with caution.

THE .30/40 KRAG



An old-timer which refuses to die is the .30/40 Krag. Tens of thousands of hand loaders have loaded for this fine old cartridge. It became popular with the handloader even prior to the 1st World War, because for years anybody with $1.50 in his pocket could purchase through the Director of Civilian Marksmanship a .30/40 Krag rifle in good condition.

In the old days too, components for the .30/40 could be purchased very cheaply from Uncle Sam — .30 caliber bullets for less than a cent, and powder correspondingly cheap.

The .30/40 cartridge has killed very dead anything that walks in North America, including the big Alaska brown bear, and the 200 gr. bullet at a muzzle velocity of in the neighborhood of 2,200 f.p.s. has always borne a reputation for deep penetration and great killing power. The 150 gr. bullet in the Krag can be driven to around 2,700 f.p.s. and the 180 gr. bullet to somewhere in the neighborhood of 2,400. Accuracy in the .30/40 is good and that old Krag bolt action was one of the slickest and easiest working ever designed.

However, the handloader with the .30/40 has to watch his step and not load anything too hot. The Krag has but one locking lug at the head of the bolt and the action is case hardened. Even the little .22 Hornet cartridge has been known to shear off the one locking lug on the Krag. The Model 95 Winchester was also made in .30/40 and actually the Model 95 Winchester lever action will take more pressures than will the Krag.

.30-40 KRAG, 110 Grain Speer Bullet — Catalog No. 3085-110-OS-SP

GRAINS	POWDER NUMBER	MUZZLE VELOCITY	200 YARD VELOCITY	GRAINS	POWDER NUMBER	MUZZLE VELOCITY	200 YARD VELOCITY
50	4320	3052	2318	45	3031	2957	2246
48	4320	2938	2232	43	3031	2868	2180
46	4320	2770	2105	41	3031	2615	1988

49	4064	3019	2295	43	HV 2	2726	2064
47	4064	2970	2257	41	HV 2	2630	2000
45	4064	2780	2110	39	HV 2	2512	1918
48	4895	2966	2255	38	4198	2808	2135
46	4895	2810	2137	36	4198	2748	2087
44	4895	2698	2052	34	4198	2646	2014

NOTE: Maximum loads listed should be used with caution.

.30-40 KRAG, 150 Grain Speer Bullet
Catalog No. 3085-150-GP-SP, 3085-150-6-SP

GRAINS	POWDER NUMBER	MUZZLE VELOCITY	200 YARD VELOCITY	GRAINS	POWDER NUMBER	MUZZLE VELOCITY	200 YARD VELOCITY
52	4350	2655	2190	45	4895	2698	2224
50	4350	2535	2092	43	4895	2570	2120
48	4350	2428	2005	41	4895	2458	2030
46	4320	2650	2186	43	3031	2692	2222
44	4320	2542	2098	41	3031	2574	2123
42	4320	2398	1980	39	3031	2492	2055
46	4064	2730	2250	41	HV 2	2555	2108
44	4064	2642	2180	39	HV 2	2482	2048
42	4064	2462	2034	37	HV 2	2962	1950

NOTE: Maximum loads listed should be used with caution.

.30-40 KRAG, 180 Grain Speer Bullet
Catalog No. 3085-180-GP-SP, 3085-180-6-SP

GRAINS	POWDER NUMBER	MUZZLE VELOCITY	200 YARD VELOCITY	GRAINS	POWDER NUMBER	MUZZLE VELOCITY	200 YARD VELOCITY
50	4831	2300	1967	42	4064	2385	2040
48	4831	2190	1874	40	4064	2293	1960
46	4831	2070	1770	38	4064	2193	1875
47	4350	2393	2045	39	3031	2413	2062
45	4350	2241	1917	37	3031	2272	1940
43	4350	2110	1805	35	3031	2110	1805
43	4320	2393	2045	39	HV 2	2385	2040
41	4320	2295	1963	37	HV 2	2275	1945
39	4320	2142	1833	35	HV 2	2200	1880

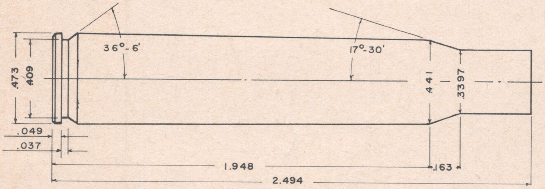
NOTE: Maximum loads listed should be used with caution.

.30-40 KRAG, 200 Grain Speer Bullet
Catalog No. 3085-200-GP-SP, 3085-200-6-SP

GRAINS	POWDER NUMBER	MUZZLE VELOCITY	200 YARD VELOCITY	GRAINS	POWDER NUMBER	MUZZLE VELOCITY	200 YARD VELOCITY
50	4831	2259	1965	40	4320	2148	1870
48	4831	2165	1885	38	4320	2046	1790
46	4831	2071	1803	36	4320	1965	1710
45	4350	2194	1910				
43	4350	2066	1800				
41	4350	1955	1700				

NOTE: Maximum loads listed should be used with caution.

THE .30/06



No OTHER smokeless powder cartridge ever designed has achieved the popularity and the world-wide distribution, both military and in sporting arms, that the .30/06 has achieved. The .30/06 cartridge is loaded wherever metallic ammunition is loaded — in the U. S., Mexico, England, Sweden. It is also loaded in Belgium and prior to the war it was also loaded by D.W.M. and by R.W.S. in Germany, where it was known, according to the European designation, as the 7.62 x 63 mm. (7.62 standing for .30 caliber and 63 for the case length in mms.)

Besides the original Model 1903 Springfield, .30/06 rifles have been made in the 1917 Enfield, the M-1 Garand, the Johnson semi-automatic. The official army rifle of Mexico is now a funny looking .30/06 rifle which combines both Springfield and Mauser ideas. The South Korean army is, of course, armed with .30/06 rifles and so is the Chinese Nationalist Army. During the last war England used a great many .30/06 rifles. American factory produced sporting rifles for the .30/06 have been the Newton, the Winchester Model 54, and Model 70, the Remington Model 30 and Model 720 and 721, the Savage Model 40 and 41. Tens of thousands of Model 1903 Springfields and Model 1917 Enfields in .30/06 have been remodeled into sporters and thousands of custom made .30/06 rifles have been built up on Mauser and Springfield actions. Many FN Mauser rifles made in Belgium are imported into this country and sold every year and so are many thousands of Husqvarna .30/06 sporters made in Sweden. The Sears, Roebuck Model 50 bolt action rifle is made in .30/06 by the High Standard Company of New Haven, Conneticut, on an FN Mauser action. For a generation the famous Mannlicher-Schoenauer rifles in .30/06 (7.62 x 63) have been made and sold both in this country and in Europe and the famous old Mauser Werke at Oberndorf, Germany made .30/06 rifles. Birmingham Small Arms Company of Birmingham, England has always mass produced .30/06 rifles and still does. Any of the big custom gun makers in England will turn out bolt action .30/06 rifles on Mauser actions or on American made Model 1917 Enfield actions. Rigby has even made a few .30/06 double rifles.

Tens of thousands of Model 1917 Enfield rifles and Model 1903 Springfield rifles have been sold to American hunters and riflemen through the Director of Civilian Marksmanship, along with hundreds of thousands of rounds of ammunition and all sorts of components. Probably more handloaders began by loading the .30/06 than began with any other two or three cartridges.

Because of what is basically a good case for which a wide variety of bullets has always been available the .30/06 has been used successfully on every sort of big and small game from Alaska brown bear to jackrabbits and woodchucks. The .30/06 may be a bit light for Alaska brown bear and it's certainly too much rifle for woodchucks; however, it will make a pretty fair job of either.

With SPEER bullets weighing anything from 110 to 200 grs. a man who handloads and owns a .30/06 is all set for any sort of game. Best bullet for the lighter game like deer, antelope and mountain sheep is probably the 150 gr. The best all around bullet is the 180 gr. and for the heaviest game the 200 gr. bullet is what is needed.

.30-'06 SPRINGFIELD, 110 Grain Speer Bullet — Catalog No. 3085-110-OS-SP

GRAINS	POWDER NUMBER	MUZZLE VELOCITY	200 YARD VELOCITY	GRAINS	POWDER NUMBER	MUZZLE VELOCITY	200 YARD VELOCITY
59	4320	3350	2540	54	3031	3375	2559
57	4320	3236	2445	52	3031	3257	2465
55	4320	3234	2453	50	3031	3202	2431
59	4064	3436	2604	55	HV 2	3422	2600
57	4064	3303	2504	53	HV 2	3360	2547
55	4064	3222	2443	51	HV 2	3272	2480
59	4895	3400	2579	45	4198	3303	2504
57	4895	3330	2522	43	4198	3221	2442
55	4895	3254	2462	41	4198	3145	2383

NOTE: Maximum loads listed should be used with caution.

.30-'06 SPRINGFIELD, 150 Grain Speer Bullet — Catalog No. 3085-150-6-SP

GRAINS	POWDER NUMBER	MUZZLE VELOCITY	200 YARD VELOCITY	GRAINS	POWDER NUMBER	MUZZLE VELOCITY	200 YARD VELOCITY
61	4350	3043	2517	55	4895	3010	2480
59	4350	2947	2437	53	4895	2907	2400
57	4350	2802	2317	51	4895	2816	2320
55	4320	2998	2475	50	3031	2973	2455
53	4320	2947	2437	48	3031	2887	2382
51	4320	2850	2357	46	3031	2823	2330
54	4064	2998	2475	52	HV 2	3052	2519
52	4064	2880	2378	50	HV 2	2962	2443
50	4064	2831	2338	48	HV 2	2912	2403

NOTE: Maximum loads listed should be used with caution.

.30-'06 SPRINGFIELD, 180 Grain Speer Bullet — Catalog No. 3085-180-6-SP

GRAINS	POWDER NUMBER	MUZZLE VELOCITY	200 YARD VELOCITY	GRAINS	POWDER NUMBER	MUZZLE VELOCITY	200 YARD VELOCITY
61	4831	2709	2319	50	4064	2700 2708	2318
59	4831	2613	2232	48	4064	2652	2265
57	4831	2512	2146	46	4064	2563	2197
56	4350	2715	2321	50	4895	2692	2302
54	4350	2615	2236	48	4895	2635	2257
52	4350	2539	2166	46	4895	2555	2181

49

51	4320	2737	2340	44	3031	2551	2179
49	4320	2655	2267	42	3031	2494	2130
47	4320	2563	2197	40	3031	2391	2043

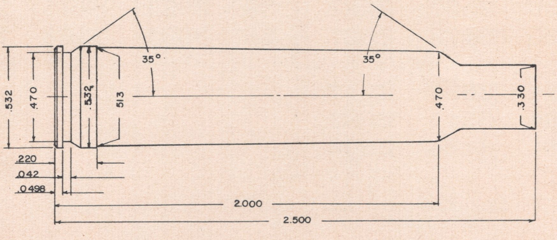
NOTE: Maximum loads listed should be used with caution.

.30-'06 SPRINGFIELD, 200 Grain Speer Bullet — Catalog No. 3085-200-6-SP

GRAINS	POWDER NUMBER	MUZZLE VELOCITY	200 YARD VELOCITY	GRAINS	POWDER NUMBER	MUZZLE VELOCITY	200 YARD VELOCITY
58	4831	2544	2218	48	4064	2543	2218
56	4831	2466	2146	46	4064	2498	2172
54	4831	2377	2063	44	4064	2427	2116
53	4350	2542	2216	48	4895	2543	2218
51	4350	2437	2119	46	4895	2478	2158
49	4350	2370	2060	44	4895	2400	2089
48	4320	2545	2219				
46	4320	2462	2142				
44	4320	2401	2090				

NOTE: Maximum loads listed should be used with caution.

THE .30 SHORT MAGNUM



THE .30 SHORT MAGNUM is a wildcat made from the .300 H & H Magnum case. The main reason for its development was to have a Magnum cartridge of .30-'06 length to function in standard length actions. It has less body taper and a sharper shoulder than the .300 H & H which accounts for it having almost as much powder capacity with resulting good velocities. Cases are made by running .300 H & H cases through a short Magnum die, trimming the necks and fire forming them in a Short Magnum rifle.

There are many variations of the cartridge in use but most of them are quite similar to the one shown in the above drawing. The variations are generally in body taper and shoulder angle only which does not change the case capacity any great amount. Maximum loads will change from one variation to another, but for the most part, the loading data listed here will be satisfactory for all of them.

.30 LUFT MAGNUM, 110 Grain Speer Bullet — Catalog No. 3085-110-OS-SP

GRAINS	POWDER NUMBER	MUZZLE VELOCITY	200 YARD VELOCITY	GRAINS	POWDER NUMBER	MUZZLE VELOCITY	200 YARD VELOCITY
75	4350	3682	2791	68	4895	3639	2756
73	4350	3584	2720	66	4895	3583	2719
71	4350	3512	2660	64	4895	3521	2666
68	4320	3659	2768	60	3031	3542	2683
66	4320	3557	2692	58	3031	3445	2607
64	4320	3473	2627	56	3031	3362	2543
65	4064	3631	2747				
63	4064	3541	2683				
61	4064	3424	2600				

NOTE: Maximum loads listed should be used with caution.

.30 LUFT MAGNUM, 150 Grain Speer Bullet — Catalog No. 3085-150-6-SP

GRAINS	POWDER NUMBER	MUZZLE VELOCITY	200 YARD VELOCITY	GRAINS	POWDER NUMBER	MUZZLE VELOCITY	200 YARD VELOCITY
74	4831	3188	2635	60	4064	3180	2622
72	4831	3104	2563	58	4064	3088	2543
70	4831	3009	2483	56	4064	3021	2500
68	4350	3204	2645	60	4895	3157	2600
66	4350	3133	2582	58	4895	3092	2552
64	4350	3043	2517	56	4895	3047	2520
60	4320	3131	2580	53	3031	3005	2481
58	4320	3075	2540	51	3031	2940	2422
56	4320	2993	2468	49	3031	2867	2365

NOTE: Maximum loads listed should be used with caution.

.30 LUFT MAGNUM, 180 Grain Speer Bullet — Catalog No. 3085-180-6-SP

GRAINS	POWDER NUMBER	MUZZLE VELOCITY	200 YARD VELOCITY	GRAINS	POWDER NUMBER	MUZZLE VELOCITY	200 YARD VELOCITY
71	4831	3010	2578	56	4064	2880	2463
69	4831	2934	2509	54	4064	2798	2395
67	4831	2844	2438	52	4064	2711	2320
65	4350	2985	2557	56	4895	2864	2452
63	4350	2895	2479	54	4895	2797	2390
61	4350	2812	2403	52	4895	2718	2322
57	4320	2888	2470				
55	4320	2815	2407				
53	4320	2741	2345				

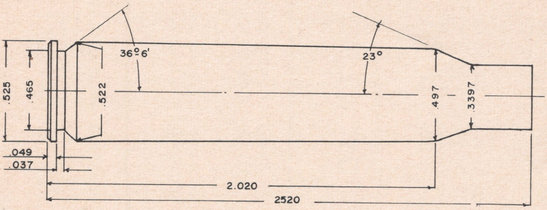
NOTE: Maximum loads listed should be used with caution.

.30 LUFT MAGNUM, 200 Grain Speer Bullet — Catalog No. 3085-200-6-SP

GRAINS	POWDER NUMBER	MUZZLE VELOCITY	200 YARD VELOCITY	GRAINS	POWDER NUMBER	MUZZLE VELOCITY	200 YARD VELOCITY
69	4831	2906	2526	63	4350	2860	2483
67	4831	2818	2443	61	4350	2760	2400
65	4831	2749	2393	59	4350	2679	2345

NOTE: Maximum loads listed should be used with caution.

THE .30 NEWTON



THE .30 NEWTON cartridge has a big, fat case with a large head — about the size of that of the .300 Magnum. It has a reasonably sharp shoulder and, all in all, looks more or less like an overgrown .30/06 case.

It was brought out by the late Charles Newton prior to the 1st World War and has never achieved a great deal of popularity. One reason was that the original .30 Newton rifles were pretty light for a cartridge of that power, which even in the days of non-progressive burning powder drove the 180 gr. bullet at over 2,800 and possibly 3,000, as Charles Newton claimed. No cartridges have been loaded for the big Newton since about 1940, when Western Cartridge Company, the only concern which made it for years, began to get into war production. It is exceedingly doubtful if it will ever be loaded by a major cartridge company again, and all Western brass is quite old. Furthermore much of it has been fired with mercuric primers and is as a consequence brittle. Some brass was made some years ago by Richard Speer, brother to Vernon Speer, but not connected with him in the enterprise. An interesting cartridge is the .30 Newton and one which in a good many ways is superior to the .300 Magnum.

.30 NEWTON, 110 Grain Speer Bullet — Catalog No. 3085-110-OS-SP

GRAINS	POWDER NUMBER	MUZZLE VELOCITY	200 YARD VELOCITY	GRAINS	POWDER NUMBER	MUZZLE VELOCITY	200 YARD VELOCITY
76	4320	3792	2863	75	4895	3788	2867
73	4320	3598	2720	72	4895	3592	2717
70	4320	3425	2598	69	4895	3415	2581

73	4064	3766	2858	69	3031	3708	2809
70	4064	3540	2680	66	3031	3508	2660
67	4064	3340	2525	63	3031	3410	2578

NOTE: Maximum loads listed should be used with caution.

.30 NEWTON, 150 Grain Speer Bullet — Catalog No. 3085-150-6-SP

GRAINS	POWDER NUMBER	MUZZLE VELOCITY	200 YARD VELOCITY	GRAINS	POWDER NUMBER	MUZZLE VELOCITY	200 YARD VELOCITY
79	4831	3217	2660	68	4064	3232	2670
76	4831	3100	2560	65	4064	3088	2553
73	4831	2918	2405	62	4064	2936	2422
75	4350	3242	2680	69	4895	3230	2668
72	4350	3090	2555	66	4895	3065	2536
69	4350	2936	2420	63	4895	2960	2445
70	4320	3280	2710	64	3031	3164	2618
67	4320	3176	2620	61	3031	3032	2500
64	4320	3043	2519	58	3031	2928	2417

NOTE: Maximum loads listed should be used with caution.

.30 NEWTON, 180 Grain Speer Bullet — Catalog No. 3085-180-6-SP

GRAINS	POWDER NUMBER	MUZZLE VELOCITY	200 YARD VELOCITY	GRAINS	POWDER NUMBER	MUZZLE VELOCITY	200 YARD VELOCITY
75	4831	3005	2578	62	4064	2872	2459
72	4831	2835	2421	59	4064	2735	2340
69	4831	2650	2265	56	4064	2627	2250
71	4350	2958	2527	65	4895	2926	2503
68	4350	2838	2422	62	4895	2803	2398
65	4350	2685	2300	59	4895	2705	2317
64	4320	2913	2496				
61	4320	2805	2400				
58	4320	2715	2321				

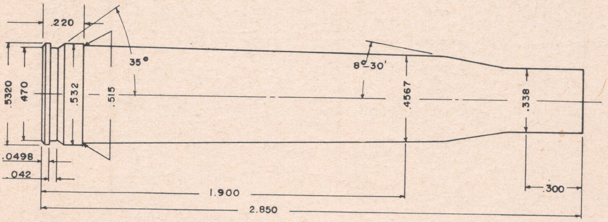
NOTE: Maximum loads listed should be used with caution.

.30 NEWTON, 200 Grain Speer Bullet — Catalog No. 3085-200-6-SP

GRAINS	POWDER NUMBER	MUZZLE VELOCITY	200 YARD VELOCITY	GRAINS	POWDER NUMBER	MUZZLE VELOCITY	200 YARD VELOCITY
73	4831	2920	2580	60	4320	2692	2378
70	4831	2693	2379	57	4320	2563	2266
67	4831	2563	2266	54	4320	2455	2165
68	4350	2807	2481				
65	4350	2695	2380				
62	4350	2547	2247				

NOTE: Maximum loads listed should be used with caution.

THE .300 H & H MAGNUM



THE .300 MAGNUM, or .30 Super, as it is known by its English designers, the great London firm of Holland & Holland, is by no means a new cartridge. It came out in England prior to the 1st World War and was designed for African plains shooting, particularly for shooting the larger antelope like roan, eland, sable, and kudu. It was introduced into this country by custom gun makers like the Hoffman Arms Company of Cleveland, Ohio and later of Ardmore, Oklahoma, and by Griffin & Howe of New York. At one time obtaining a .300 Magnum necessitated acquiring a Magnum Mauser action which never cost less than $100 retail in the United States. However, in 1937 Winchester brought out the Model 70 Winchester for that cartridge, and since that time the cartridge has become more and more popular.

The .300 Magnum case has been widely criticized, because of its sloping body and its very gentle shoulder. Actually it was not designed for American powders, but for the long-stick British Cordite and Axite. American powders tend to funnel down the bore as they are burned and to increase throat erosion. That is the reason probably why the Winchester Model 70 rifles are made of rust and erosion resistant high-chrome steel, so rust proof that it has to be iron plated and the iron blued.

However, the .300 Magnum case has a fine strong belted head and is the strongest of all centerfire cases. It has good powder capacity and as a consequence it will drive all of the .30/06 bullets from 110 to 220 or even 250 grs. to higher velocity than will the .30/06.

Because of the large capacity, the best powders for the .300 H & H are those that burn slowly like No. 4350 and No. 4831.

.300 H & H MAGNUM, 110 Grain Speer Bullet — Cat. No. 3085-110-OS-SP

GRAINS	POWDER NUMBER	MUZZLE VELOCITY	200 YARD VELOCITY	GRAINS	POWDER NUMBER	MUZZLE VELOCITY	200 YARD VELOCITY
78	4350	3729	2824	65	HV 2	3667	2780
74	4350	3601	2734	63	HV 2	3598	2726
70	4350	3352	2542	61	HV 2	3530	2680
67	4320	3614	2740	64	3031	3700	2806
65	4320	3510	2661	62	3031	3638	2760
61	4320	3371	2558	60	3031	3501	2658
68	4064	3621	2744				
66	4064	3620	2743				
64	4064	3603	2736				

NOTE: Maximum loads listed should be used with caution.

.300 H & H MAGNUM, 150 Grain Speer Bullet
Catalog No. 3085-150-GP-SP, 3085-150-6-SP

GRAINS	POWDER NUMBER	MUZZLE VELOCITY	200 YARD VELOCITY	GRAINS	POWDER NUMBER	MUZZLE VELOCITY	200 YARD VELOCITY
73	4831	3270	2700	64	4064	3232	2668
71	4831	3136	2586	62	4064	3149	2600
69	4831	3075	2538	60	4064	3081	2543

73	4350	3360	2777	62	HV 2	3255	2688
71	4350	3271	2701	60	HV 2	3194	2632
69	4350	3215	2657	58	HV 2	3123	2580
64	4320	3203	2642	64	4895	3150	2600
62	4320	3118	2587	62	4895	3075	2538
60	4320	3053	2520	60	4895	3018	2490

NOTE: Maximum loads listed should be used with caution.

.300 H & H MAGNUM, 180 Grain Speer Bullet
Catalog No. 3085-180-GP-SP, 3085-180-6-SP

GRAINS	POWDER NUMBER	MUZZLE VELOCITY	200 YARD VELOCITY	GRAINS	POWDER NUMBER	MUZZLE VELOCITY	200 YARD VELOCITY
69	4831	3055	2612	61	4320	2966	2539
67	4831	2968	2540	59	4320	2895	2476
65	4831	2825	2418	57	4320	2740	2343
67	4350	3034	2592	61	4064	2985	2559
65	4350	2961	2535	59	4064	2922	2500
63	4350	2903	2483	57	4064	2844	2438
62	4895	2978	2542	59	HV 2	2969	2541
60	4895	2915	2492	57	HV 2	2895	2476
58	4895	2855	2440	55	HV 2	2825	2418

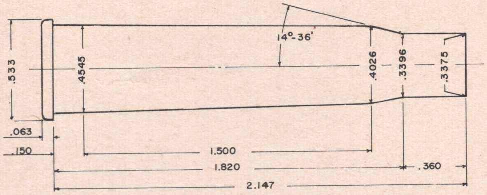
NOTE: Maximum loads listed should be used with caution.

.300 H & H & MAGNUM, 200 Grain Speer Bullet — Cat. No. 3085-200-6-SP

GRAINS	POWDER NUMBER	MUZZLE VELOCITY	200 YARD VELOCITY	GRAINS	POWDER NUMBER	MUZZLE VELOCITY	200 YARD VELOCITY
68	4831	2702	2357	58	4064	2695	2341
66	4831	2583	2246	56	4064	2600	2262
64	4831	2496	2170	54	4064	2532	2201
66	4350	2785	2422	56	HV 2	2703	2358
64	4350	2705	2360	54	HV 2	2622	2282
62	4350	2617	2277	52	HV 2	2558	2221
59	4320	2676	2323	59	4895	2713	2361
57	4320	2636	2297	57	4895	2610	2270
55	4320	2562	2232	55	4895	2523	2198

NOTE: Maximum loads listed should be used with caution.

THE .303 BRITISH



Case capacity and case shape of the .303 British cartridge are very similar to those of the .30/40 Krag. The .303, however, takes a bullet of slightly larger size, or about .311, instead of .308, as is the case of the .30/06 and .300 Magnum.

What the .30/40 was to the United States and to North America the .303 has been to the British Empire. The cartridge was very widely used in Africa, particularly after the Boer War when thousands of .303 short Lee Enfield rifles were sold to settlers along with hundreds of thousands of rounds of full metal cased cartridges. The .303 cartridge has probably killed more game in Africa than any other cartridge — and also wounded more. The .303 has also been very popular in Canada because, of course, Canada is part of the British Empire. Although the old Model 95 Winchester was made in the .303 British cartridge, probably because of the Canadian trade, it has never been popular in the United States.

.303 BRITISH, 150 Grain Speer Bullet — Catalog No. 311-150-6-SP

GRAINS	POWDER NUMBER	MUZZLE VELOCITY	200 YARD VELOCITY	GRAINS	POWDER NUMBER	MUZZLE VELOCITY	200 YARD VELOCITY
50	4350	2547	2103	45	4895	2704	2232
48	4350	2443	2018	43	4895	2580	2130
46	4350	2320	1915	41	4895	2465	2016
46	4320	2662	2200	43	3031	2698	2226
44	4320	2554	2108	41	3031	2582	2132
42	4320	2470	2040	39	3031	2495	2060
46	4064	2737	2260	41	HV 2	2562	2115
44	4064	2650	2186	39	HV 2	2490	2054
42	4064	2468	2038	37	HV 2	2370	1957

NOTE: Maximum loads listed should be used with caution.

.303 BRITISH, 180 Grain Speer Bullet — Catalog No. 311-180-GP-SP

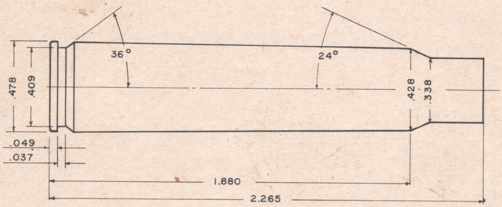
2460 or 2500

41

GRAINS	POWDER NUMBER	MUZZLE VELOCITY	200 YARD VELOCITY	GRAINS	POWDER NUMBER	MUZZLE VELOCITY	200 YARD VELOCITY
50	4831	2324	1990	42	4064	2405	2058
48	4831	2212	1893	40	4064	2318	1983
46	4831	2093	1790	38	4064	2215	1895
47	4350	2410	2062	39	3031	2432	2080
45	4350	2258	1930	37	3031	2295	1960
43	4350	2135	1827	35	3031	2130	1820
43	4320	2408	2060	39	HV 2	2408	2060
41	4320	2315	1980	37	HV 2	2295	1964
39	4320	2165	1852	35	HV 2	2218	1896

NOTE: Maximum loads listed should be used with caution.

THE 7.7 mm JAPANESE



THE 7.7 mm x 58 mm cartridge was introduced by the Japanese during World War II. It was loaded with 175 grain bullets which were driven at velocities of around 2500 foot-seconds. Many Japanese rifles using this cartridge were brought back to this country after the war and a considerable number of them are in use today. The rifles produced early in the war were well made but as the war continued the quality of workmanship and materials was lowered. This rifle is sometimes referred to as the ".31 Jap" which is not quite correct. A .31 caliber rifle would have a bore diameter of .310" and a groove diameter of about .318". It is actually a .303 caliber with a groove diameter of from .311" to .313".

Many handloaders obtain cases for the 7.7 mm Jap by reforming .30-'06 cases although firing them is somewhat hazardous; they are approximately .020" smaller in diameter than the chamber near the head of the case. When higher pressure loads are fired, excessive bulge appears at that point. This condition could cause a weak case to rupture and result in injury to the rifle and to the shooter. Cases should be checked carefully before they are loaded and, after being fired, they should be neck resized only.

To avoid the use of undersize cases in this rifle, a great many shooters have had the barrels set back and rechambered to take the .300 Savage case which is handloaded using .311" diameter bullets.

7.7 MM JAP, 150 Grain Speer Bullet — Catalog No. 311-150-6-SP

GRAINS	POWDER NUMBER	MUZZLE VELOCITY	200 YARD VELOCITY	GRAINS	POWDER NUMBER	MUZZLE VELOCITY	200 YARD VELOCITY
54	4350	2750	2254	46	4895	2708	2218
52	4350	2593	2147	44	4895	2647	2168
50	4350	2445	2005	42	4895	2567	2102
46	4320	2751	2255	42	3031	2731	2235
44	4320	2625	2150	40	3031	2628	2152
42	4320	2543	2085	38	3031	2502	2051
46	4064	2756	2258	45	HV 2	2673	2191
44	4064	2672	2190	43	HV 2	2622	2148
42	4064	2595	2145	41	HV 2	2429	1990

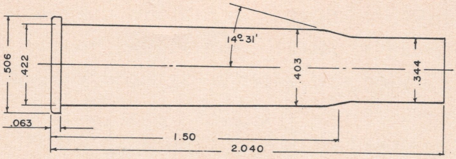
NOTE: Maximum loads listed should be used with caution.

7.7 MM JAP, 180 Grain Speer Bullet — Catalog No. 311-180-GP-SP

GRAINS	POWDER NUMBER	MUZZLE VELOCITY	200 YARD VELOCITY	GRAINS	POWDER NUMBER	MUZZLE VELOCITY	200 YARD VELOCITY
50	4350	2455	2048	42	4895	2425	2025
48	4350	2380	1985	40	4895	2360	1970
46	4350	2290	1910	38	4895	2240	1870
43	4320	2503	2090	42	HV 2	2423	2023
41	4320	2434	2030	40	HV 2	2352	1962
39	4320	2345	1960	38	HV 2	2227	1860
42	4064	2458	2050	39	3031	2468	2060
40	4064	2383	1990	37	3031	2383	1990
38	4064	2310	1930	35	3031	2235	1865

NOTE: Maximum loads listed should be used with caution.

THE .32 WINCHESTER SPECIAL

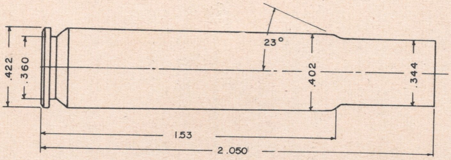


These days there isn't much use for the .32 Winchester Special, but originally it was brought out as a cartridge which would use smokeless powder, but which could be reloaded with black powder more easily than its running mate, the .30/30 could. The .32 Winchester Special was brought out, like the .30/30, for the Winchester Model 94 rifle.

A great many heated arguments have taken place about which is the better killer, the .30/30 or the .32 Special. Actually the two cartridges are ballistically as alike as two peas in a pod. Both are loaded with 165 gr. and 170 gr. bullets at quite similar velocity. The .30/30 has a very slightly superior sectional density, of course, with the same bullet weight, but the .32 Special has slightly higher velocity. Take your pick.

The .30/30 has a 1-12 twist and even barrels which are pretty well shot out will keep a bullet in the .30/30 point on. On the other hand the .32 Special is made with a 1-16 twist, so it could be used with black powder without hopelessly clogging it up. The result is that once the .32 Special barrel gets a bit worn you can't hit the side of a house with it. Actually the .32 Special is a cartridge which these days is not much reloaded.

THE .32 REMINGTON RIMLESS



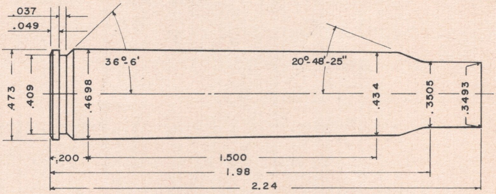
The rimless counterpart of the .32 Winchester Special is known as the .32 Remington. No rifle is made for it at the present time and it was never a particularly popular cartridge. It was one of the early smokeless powder cartridges which will head for the boneyard one of these days, but if a man has a .32 Remington and wants to load for it, this booklet has the dope.

.32 WINCHESTER SPEC., 170 Grain Speer Bullet — Cat. No. 321-170-WR-SP

GRAINS	POWDER NUMBER	MUZZLE VELOCITY	200 YARD VELOCITY	GRAINS	POWDER NUMBER	MUZZLE VELOCITY	200 YARD VELOCITY
37	4320	2150	1545	27	4198	2180	1570
35	4320	2020	1458	25	4198	2039	1465
33	4320	1958	1387	23	4198	1903	1372
37	4895	2158	1550	26	4759	2147	1543
35	4895	2067	1490	24	4759	2038	1466
33	4895	1955	1385	22	4759	1927	1382
34	3031	2248	1620	34	HV 2	2193	1578
32	3031	2147	1543	32	HV 2	2080	1498
30	3031	2021	1459	30	HV 2	1960	1410

NOTE: Maximum loads listed should be used with caution.

THE 8 mm MAUSER



LIKE THE .30/06, the 8 mm. Mauser or 8 x 57 is one of the world's great cartridges. In the last war it was not only used by Germany, but by Poland, Belgium, Czechoslovakia and Jugoslavia. The 8 mm. was the official Chinese cartridge before Chiang Kai-shek's forces were re-armed with American .30/06 rifles. The 8 mm. is also the favorite German cartridge for sporting use — or was prior to the defeat of Germany.

The 8 mm. cartridge first came out for the Model 88 military rifle known as the Model 88 Mannlicher and the Model 88 Mauser, but which in reality is more of a Mannlicher than a Mauser.

It was originally loaded with the 236 gr. round nosed bullet at a muzzle velocity of around 2,150. The original groove diameter of the 88 barrels was .318. In 1905 the cartridge was redesigned to take a 150 gr. bullet at the then very high velocity of about 2,930 f.p.s. with a slightly larger bullet measuring usually about .323. Higher velocity, higher pressure and a larger bullet makes the Model 1905 type ammunition poison for an old 88. The 8 mm. Mauser or 8 x 57 cartridge has long baffled Americans. The difference between the two versions of the same cartridge is well-known in Europe. The ammunition for the Model 88 type rifle is always known as the 8 x 57-J, whereas the ammunition for the Model 1905 type is known as the 8 x 57-JS. Rifles and rifle barrels for combination guns for the Model 88 type cartridge are marked 7.7 or 7.8, whereas for the 1905 type they are marked 7.9 and 7.92. The factor is further complicated by the fact that rimmed versions of both cartridges are made. The rimmed version of the 88 cartridge is known as the 8 x 57-JR and the cartridge for the rimmed version of the Model 1905 is called the 8 x 57-RS. In addition, there is another 8 x 57 cartridge which is simply known as the 8 x 57-R. It is a cartridge with a less pronounced bottleneck. In addition there are other 8 mm. cartridges, both rimless and rimmed — the 8 x 60, the 8 x 64, etc. In the United States a great many Model 98 German military rifles were rechambered to take .30/06 cases necked out to handle an 8 mm. bullet, where they were known as the 8 mm./06 and also as the 8 mm x 63.

Actually the 8mm. Mauser is a good cartridge. It will do just about anything the .30/06 will do and some of the better rifles, when used with Speer bullets, give astonishing accuracy.

8 x 57 MAUSER, 125 Grain Speer Bullet — Catalog No. 323-125-OS-SP

GRAINS	POWDER NUMBER	MUZZLE VELOCITY	200 YARD VELOCITY	GRAINS	POWDER NUMBER	MUZZLE VELOCITY	200 YARD VELOCITY
56	4320	3004	2315	52	3031	3025	2329
54	4320	2905	2240	50	3031	2897	2221
52	4320	2747	2118	48	3031	2772	2123

54	4895	2960	2278	48	4198	3176	2440
52	4895	2892	2218	46	4198	3074	2360
50	4895	2730	2100	44	4198	2926	2251

NOTE: Maximum loads listed should be used with caution.

8 x 57 MAUSER, 150 Grain Speer Bullet — Catalog No. 323-150-6-SP

GRAINS	POWDER NUMBER	MUZZLE VELOCITY	200 YARD VELOCITY	GRAINS	POWDER NUMBER	MUZZLE VELOCITY	200 YARD VELOCITY
54	4320	2840	2242	50	3031	2915	2305
52	4320	2745	2178	48	3031	2827	2238
50	4320	2645	2096	46	3031	2528	2003
50	4064	2727	2160	52	HV 2	2938	2320
48	4064	2595	2051	50	HV 2	2802	2220
46	4064	2526	2000	48	HV 2	2698	2133
52	4895	2736	2163	44	4198	2946	2337
50	4895	2656	2100	42	4198	2802	2220
48	4895	2553	2019	40	4198	2600	2058

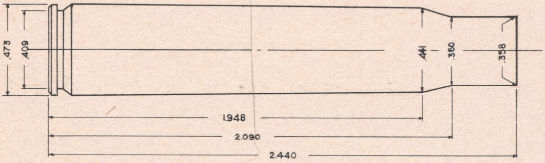
NOTE: Maximum loads listed should be used with caution.

8 x 57 MAUSER, 170 Grain Speer Bullet — Catalog No. 323-170-SS-SP

GRAINS	POWDER NUMBER	MUZZLE VELOCITY	200 YARD VELOCITY	GRAINS	POWDER NUMBER	MUZZLE VELOCITY	200 YARD VELOCITY
52	4320	2697	2157	48	3031	2747	2200
50	4320	2565	2050	46	3031	2592	2075
48	4320	2453	1960	44	3031	2483	1987
50	4064	2670	2137	50	HV 2	2720	2177
48	4064	2577	2060	48	HV 2	2653	2120
46	4064	2395	1913	46	HV 2	2572	2058
49	4895	2585	2068	42	4198	2677	2139
47	4895	2459	1961	40	4198	2540	2031
45	4895	2310	1848	38	4198	2419	1932

NOTE: Maximum loads listed should be used with caution.

THE .333 O.K.H.



The .333 O.K.H. belongs to the .30/06 family in that like many other wildcats it is based on a re-necked .30/06 case. Cases are easily formed by running .30/06 brass through a full-length .333 O.K.H. die, then trimming the necks uniform and chamfering. The cartridge was developed by Charles O'Neil, Elmer Keith, and Don Hopkins — hence the O.K.H. First bullets were .333 Jeffery bullets obtained from England, Although bullets weighing 250 and 300 grains have been used, it was agreed at the time the Speer .333 bullet was developed that the best all-around bullet weighed about 275 grains.

The .333 O.K.H. uses barrels with a bore diameter of .325 and a groove diameter of .333. No bullets other than this odd size can be used.

The cartridge has been used for a decade or more and those who use it swear by it. Accuracy is generally first-rate, with many reporting groups running one inch at 100 yds. or slightly over. Because of its great sectional density, the 275 grain Speer .333 bullet flies quite flat in spite of its moderate velocity.

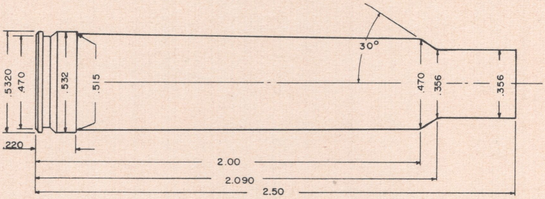
The cartridge has been used successfully on most African game from rhino on down, and it is credited with one-shot kills on the heaviest American game like elk, moose, and large bear. It is also credited with being just about the exact medicine for African lion. The .333 O.K.H. is a far more pleasant rifle to shoot than the .375 Magnum, but those who like it claim it will give deeper penetration and will generally kill just as well.

.333 OKH, 275 Grain Speer Bullet — Catalog No. 333-275-SS-SP

GRAINS	POWDER NUMBER	MUZZLE VELOCITY	200 YARD VELOCITY	GRAINS	POWDER NUMBER	MUZZLE VELOCITY	200 YARD VELOCITY
59	4831	2400	2084	47	4895	2246	1950
57	4831	2314	2010	45	4895	2202	1912
55	4831	2216	1924	43	4895	2112	1833
55	4350	2320	2015	46	4064	2215	1923
53	4350	2250	1955	44	4064	2141	1860
51	4350	2165	1880	42	4064	2062	1790
47	4320	2253	1957				
45	4320	2154	1870				
43	4320	2087	1814				

NOTE: Maximum loads listed should be used with caution.

THE .333 EXPRESS



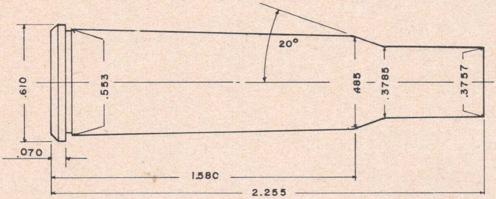
The .333 express is one of the Magnum group of wildcats. It is the .30 Short Magnum with the neck opened up to take a .333 caliber bullet. The Luft Bros., gunsmiths in Spokane, Washington developed this particular cartridge and it has been met with considerable enthusiasm by a number of Pacific Northwest big game hunters. Loaded with Hodgdon's No. 4831 powder, it gives the 275 grain Speer Bullet a muzzle velocity of 2550 foot-seconds. It is an excellent big game cartridge giving good accuracy, flat trajectory and exceptionally good penetration on game due to the great sectional density of the 275 grain bullet. Its moderate velocity allows close range shooting of smaller game without any great loss of meat.

.333 EXPRESS, 275 Grain Speer Bullet — Catalog No. 333-275-SS-SP

GRAINS	POWDER NUMBER	MUZZLE VELOCITY	200 YARD VELOCITY	GRAINS	POWDER NUMBER	MUZZLE VELOCITY	200 YARD VELOCITY
68	4831	2550	2212	52	4064	2307	2004
66	4831	2478	2150	50	4064	2246	1950
64	4831	2420	2103	48	4064	2156	1873
63	4350	2455	2132	53	4895	2324	2020
61	4350	2360	2050	51	4895	2241	1946
59	4350	2304	2000	49	4895	2183	1897
54	4320	2345	2035				
52	4320	2274	1974				
50	4320	2222	1930				

NOTE: Maximum loads listed should be used with caution.

THE .348 WINCHESTER



THE ONLY RIFLE that's ever been made for the .348 Winchester cartridge is the lever action Winchester Model 71. Although the model No. is 71 and, as we understand it, the plan was to bring the rifle out after the Winchester Model 70 bolt action rifle, the Model 71 actually appeared first — in 1936 — whereas the Model 70 was first announced in the January 1, 1937 price list.

As any gun nut knows, the Model 71 Winchester lever action rifle is simply a modernized version of the fine old Winchester Model 1886 with a few structural changes, but principally with an action made of heat treated alloy steel. The .348 cartridge is a modernized version of the old Winchester .33, which was the best of the smokeless powder cartridges made for the 1886 and which is still loaded with a 200 gr. bullet at a velocity of 2,190.

As loaded by the factories, the .348 drives a 150 gr. bullet at 2,890 and a 200 gr. bullet at 2,530. The .348 has been reasonably but not wildly popular. Actually the .348 cartridge is an exceedingly good one for any type of brush hunting.

In reloading the .348 one has to keep the pressures fairly low because if this is not done the cases stretch a good deal and brass does not last long, as it has to be full length resized often.

Probably pressures around 40,000 pounds plus or minus 2,000 pounds are about right. With the .348 the slower burning powders are probably best, anything from No. 4064 through No. 4320 and No. 4350.

.348 WINCHESTER, 180 Grain Speer Bullet — Catalog No. 349-180-W-SP

GRAINS	POWDER NUMBER	MUZZLE VELOCITY	200 YARD VELOCITY	GRAINS	POWDER NUMBER	MUZZLE VELOCITY	200 YARD VELOCITY
69	4831	2568	1904	55	4064	2526	1867
67	4831	2428	1796	53	4064	2434	1800
65	4831	2380	1760	51	4064	2351	1738
67	4350	2660	1967	53	4895	2445	1808
65	4350	2565	1901	51	4895	2342	1733
63	4350	2482	1835	49	4895	2255	1668
58	4320	2586	1912	51	3031	2540	1878
56	4320	2440	1805	49	3031	2458	1817
54	4320	2328	1720	47	3031	2386	1765

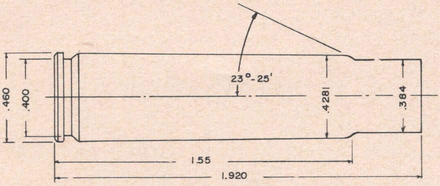
NOTE: Maximum loads listed should be used with caution.

.348 WINCHESTER, 220 Grain Speer Bullet — Catalog No. 349-220-W-SP

GRAINS	POWDER NUMBER	MUZZLE VELOCITY	200 YARD VELOCITY	GRAINS	POWDER NUMBER	MUZZLE VELOCITY	200 YARD VELOCITY
65	4831	2216	1705	52	4064	2286	1760
63	4831	2132	1640	50	4064	2207	1700
61	4831	2054	1582	48	4064	2135	1642
62	4350	2385	1837	50	4895	2220	1710
60	4350	2310	1778	48	4895	2118	1630
58	4350	2242	1726	46	4895	2041	1571
55	4320	2278	1754				
53	4320	2182	1686				
51	4320	2112	1626				

NOTE: Maximum loads listed should be used with caution.

THE .35 REMINGTON



Whereas most of the other cartridges of the Remington rimless line are dying off, the .35 Remington retains its popularity. Unlike the others, the .35 Remington is larger, being only .013" smaller in head diameter than the .30-'06 case. The cartridge bears a reputation of being one of the best killers in the deer rifle class, a better killer than the .30/30 and the .32 Special because of the heavier bullet of larger diameter. As loaded by the factories the .35 Remington drives a 200 gr. bullet at a velocity of 2,210 with 2,170 ft. pounds of muzzle energy as compared to the 170 gr. bullet at 2,220 with 1,860 ft. pounds of muzzle energy in the .30/30.

Many different rifles have been chambered for the .35 Remington — the Model 14 and 141 Remington, the Model 8 and Model 81 Remington, the Standard rifle, a fearful turkey, made prior to the 1st World War that could be used both as a pump rifle and as an automatic — sometimes. The Model 70 Winchester was for a short time chambered for the .35 Remington cartridge and the Marlin Model 336 rifles are still so chambered. Today Remington chambers the Model 760 slide action rifle for the cartridge and it is a fast-handling, nicely stocked piece of ordnance for brush use. In the past, custom rifle makers like Griffin & Howe built up many lightweight sporters on the short Mauser or "K" action in that cartridge for use by people who didn't want to carry much rifle on moose and heavier game at close range.

The .35 Remington case doesn't have much shoulder and powder capacity is small. As a consequence one should use faster burning powders for best results. One should also watch cases for partial head separations. The combination of little shoulder and use of the case in rifles which often do not lock at the head of the bolt or breech block tends to make headspace a problem.

.35 REMINGTON, 180 Grain Speer Bullet — Catalog No. 3585-180-R-SP

GRAINS	POWDER NUMBER	MUZZLE VELOCITY	200 YARD VELOCITY	GRAINS	POWDER NUMBER	MUZZLE VELOCITY	200 YARD VELOCITY
45	4320	2251	1585	42	3031	2361	1671
43	4320	2175	1540	40	3031	2236	1582
41	4320	2085	1477	38	3031	2086	1477
44	4064	2279	1607	42	HV 2	2315	1637
42	4064	2195	1554	40	HV 2	2180	1543
40	4064	2038	1442	38	HV 2	2117	1496
44	4895	2236	1582	36	4198	2295	1623
42	4895	2141	1517	34	4198	2163	1532
40	4895	2070	1464	32	4198	2013	1423

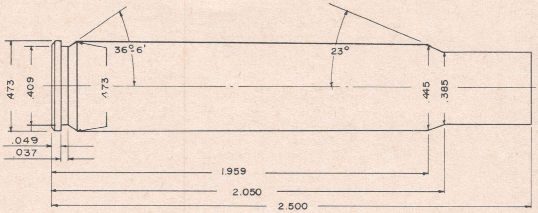
NOTE: Maximum loads listed should be used with caution.

.35 REMINGTON, 220 Grain Speer Bullet — Catalog No. 3585-220-R-SP

GRAINS	POWDER NUMBER	MUZZLE VELOCITY	200 YARD VELOCITY	GRAINS	POWDER NUMBER	MUZZLE VELOCITY	200 YARD VELOCITY
41	4320	1958	1488	36	3031	1920	1459
39	4320	1916	1457	34	3031	1806	1372
37	4320	1810	1375	32	3031	1624	1233
39	4064	1968	1496	35	HV 2	1911	1452
37	4064	1836	1394	33	HV 2	1830	1391
35	4064	1736	1320	31	HV 2	1723	1310
39	4895	1952	1483	31	4198	1898	1443
37	4895	1853	1407	29	4198	1765	1342
35	4895	1718	1306	27	4198	1698	1292

NOTE: Maximum loads listed should be used with caution.

THE .35 WHELEN



Most people think that the .35 Whelen cartridge, which is a .30/06 case necked up to .35 caliber, was designed by Colonel Townsend Whelen. As a matter of fact, it was only named for Colonel Whelen, but was designed by James Howe, who was then with the famous firm of Griffin & Howe.

The cartridge was designed, I believe, along in the early 1920's at a time when the only way to get a .375 Magnum was to have one built up on the long and expensive Magnum action. The great advantage of the .35 Whelen was that this was a cartridge that could handle heavy bullets and yet could be used on the short actions like the 98 Mauser and the Springfield.

Because .30/06 cases are cheap and plentiful and because good bullets like those made by Speer Products in .35 caliber are available, the .35 Whelen still retains considerable popularity. However, there are probably fewer .35 Whelens in use today than there were back in the 1920's and early 1930's, because with a minimum of fuss and bother one can get a factory Winchester Model 70 in .375 Magnum caliber. That great cartridge, of course, will beat the .35 Whelen on every count.

However, the man who has a yen for a rifle using heavy bullets of fairly large diameter at good velocities can't go wrong on a .35 Whelen, if he is a handloader — and of course, he is a handloader or he would not be reading this book.

There are two varieties of the .35 Whelen and maybe more. The original cartridge had a short shoulder with the same slope as that of the .30/06. The so-called improved version has a sharper shoulder which theoretically at least will maintain headspace against the blow of the firing pin better.

.35 WHELEN, 180 Grain Speer Bullet — Catalog No. 3585-180-R-SP

GRAINS	POWDER NUMBER	MUZZLE VELOCITY	200 YARD VELOCITY	GRAINS	POWDER NUMBER	MUZZLE VELOCITY	200 YARD VELOCITY
68	4320	2936	2162	62	3031	2981	2205
65	4320	2875	2127	59	3031	2864	2120
62	4320	2760	2041	57	3031	2755	2038
65	4064	2913	2152	62	HV 2	2935	2170
62	4064	2801	2078	60	HV 2	2867	2122
59	4064	2676	1979	58	HV 2	2792	2063
66	4895	2915	2158	56	4198	3027	2240
63	4895	2823	2090	54	4198	2873	2125
60	4895	2735	2022	52	4198	2816	2080

NOTE: Maximum loads listed should be used with caution.

.35 WHELEN, 220 Grain Speer Bullet — Catalog No. 3585-220-R-SP

GRAINS	POWDER NUMBER	MUZZLE VELOCITY	200 YARD VELOCITY	GRAINS	POWDER NUMBER	MUZZLE VELOCITY	200 YARD VELOCITY
60	4320	2740	2081	57	3031	2713	2060
58	4320	2555	1940	55	3031	2640	2007
56	4320	2460	1870	53	3031	2543	1932
60	4064	2674	2030	57	HV 2	2690	2042
58	4064	2623	1992	55	HV 2	2612	1983
56	4064	2566	1950	53	HV 2	2538	1926
60	4895	2675	2032				
58	4895	2607	1981				
56	4895	2534	1923				

NOTE: Maximum loads listed should be used with caution.

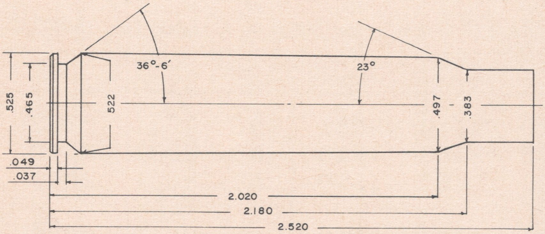
.35 WHELEN, 250 Grain Speer Bullet — Catalog No. 3585-250-6-SP

GRAINS	POWDER NUMBER	MUZZLE VELOCITY	200 YARD VELOCITY	GRAINS	POWDER NUMBER	MUZZLE VELOCITY	200 YARD VELOCITY
59	4320	2543	2148	56	3031	2575	2173
57	4320	2477	2090	54	3031	2506	2117
55	4320	2379	2008	52	3031	2415	2040
58	4064	2542	2147	55	HV 2	2485	2098
56	4064	2447	2066	53	HV 2	2448	2067
54	4064	2397	2023	51	HV 2	2333	1970

57	4895	2534	2140
55	4895	2485	2098
53	4895	2396	2023

NOTE: Maximum loads listed should be used with caution.

THE .35 NEWTON



Charles Newton's "elephant" cartridge was his .35. The late Charles "Bwana" Cottar is supposed to have used it in Africa on game up to rhino. It is no elephant cartridge. Velocity is too high and the bullet is not heavy enough. It probably would do all right for rhino, although he has the reputation of being a tough monkey indeed, he is not very difficult to kill, nor is he difficult to turn when he charges.

The .35 Newton case is the same as the .30 Newton case except that it is necked out to .35. It was never particularly popular — first because no great number of .35 Newton rifles were ever made, and second because the original .35 Newton rifle was too light for a cartridge of that power and recoil. Charles Cottar wrote that about half of the time that he fired it the hinged floorplate would fly open and drop the cartridges on the ground. That would be a sweet deal indeed when one was facing a charging rhino.

In power, of course, the .35 Newton is about midway between the .35 Whelen and the .375.

One advantage of the .35 Newton is that it is shorter overall than the .375 and hence can be used in standard Springfield and Mauser actions with no alteration except opening up the bolt face and extractor.

Like the .30 Newton, the .35 faces a bad cartridge case situation. Western cases are quite old, since none have been manufactured since probably 1936 or thereabouts and the .35 Newton was always loaded by Western with mercuric primers. Richard Speer turned out a few .35 Newton cases, but it is questionable as to whether he will ever manufacture any more or not.

.35 NEWTON, 180 Grain Speer Bullet — Catalog No. 3585-180-R-SP

GRAINS	POWDER NUMBER	MUZZLE VELOCITY	200 YARD VELOCITY	GRAINS	POWDER NUMBER	MUZZLE VELOCITY	200 YARD VELOCITY
83	4831	2645	1955	80	4064	3280	2420
79	4831	2522	1861	77	4064	3158	2323
75	4831	2327	1720	74	4064	3043	2245
83	4350	2846	2101	70	3031	3067	2263
80	4350	2760	2038	68	3031	2963	2190
77	4350	2683	1981	66	3031	2765	2042
81	4320	3245	2400				
79	4320	3175	2340				
77	4320	3110	2297				

NOTE: Maximum loads listed should be used with caution.

.35 NEWTON, 220 Grain Speer Bullet — Catalog No. 3585-220-R-SP

GRAINS	POWDER NUMBER	MUZZLE VELOCITY	200 YARD VELOCITY	GRAINS	POWDER NUMBER	MUZZLE VELOCITY	200 YARD VELOCITY
83	4831	2626	1993	77	4064	3082	2342
81	4831	2567	1951	75	4064	3014	2287
79	4831	2508	1909	73	4064	2966	2259
83	4350	2880	2187	69	3031	2862	2177
81	4350	2792	2120	67	3031	2758	2096
79	4350	2745	2085	65	3031	2635	2000

78	4320	3054	2319
76	4320	2964	2256
74	4320	2870	2180

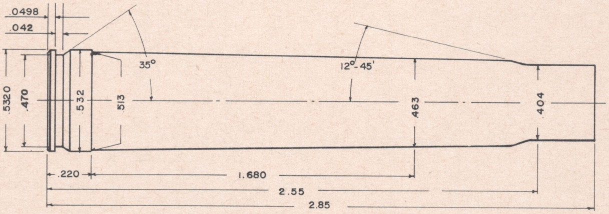
NOTE: Maximum loads listed should be used with caution.

.35 NEWTON, 250 Grain Speer Bullet — Catalog No. 3585-250-6-SP

GRAINS	POWDER NUMBER	MUZZLE VELOCITY	200 YARD VELOCITY	GRAINS	POWDER NUMBER	MUZZLE VELOCITY	200 YARD VELOCITY
81	4831	2587	2202	74	4064	2897	2461
79	4831	2450	2083	72	4064	2792	2379
77	4831	2415	2048	70	4064	2650	2258
83	4350	2860	2438	68	3031	2762	2341
81	4350	2800	2382	66	3031	2665	2275
79	4350	2722	2320	64	3031	2608	2220
77	4320	2940	2500				
75	4320	2815	2398				
73	4320	2742	2339				

NOTE: Maximum loads listed should be used with caution.

THE .375 MAGNUM



THE .375 MAGNUM case is no spring chicken, since it was introduced in England by the famous London rifle making firm of Holland & Holland in 1912. For years Holland & Holland and other British and American rifle makers built up the .375 H & H on the long Magnum Mauser square-bridge action, but in

1936 when Winchester brought out the Model 70 the .375 could be purchased at the same price as a .30/06 or .270. The cartridge has become increasingly popular ever since its introduction.

A lot of chaps who like big bore rifles, heavy bullets and lots of power use the .375 on light game like deer and antelope. Probably the most useful spot for the .375 is on the very heaviest game like Alaska brown bear, where actually it is probably one of the very best cartridges, because the brown bear are large and tough and found in heavy alders, willows and brush. In certain areas it might be a good idea for large northern moose. Actually, though, there is no vast need for the .375 in North America.

In Africa, though, the .375 is probably the most useful all-around cartridge and indeed in Tanganyika it is illegal to shoot any of the dangerous game — elephant, rhino, buffalo or lion — with any cartridge less powerful than the .375.

The .375 has a large capacity case without much shoulder. Probably with the heavier bullets the best powder is No. 4350, but No. 4064 is also good, and as a matter of fact some Western .375 ammunition was broken down and the 270 gr. soft point bullet appeared to be loaded with 71.5 grs. of No. 4064 and the 300 gr. bullet with 70.5 grs.

Recoil of the .375 is right up there, but it will not be too distracting in a rifle of good weight fired by a man who is used to a bit of recoil.

Surprisingly enough, some very beautiful groups with the .375 are obtained with scope sights and Speer bullets. Actually a good .375 will shoot right along with the .30/06 rifles.

.375 H & H MAGNUM, 235 Grain Speer Bullet — Cat. No. 3755-235-SS-SP

GRAINS	POWDER NUMBER	MUZZLE VELOCITY	200 YARD VELOCITY	GRAINS	POWDER NUMBER	MUZZLE VELOCITY	200 YARD VELOCITY
86	4350	2795	2290	79	4064	2976	2435
82	4350	2723	2230	76	4064	2846	2330
78	4350	2602	2135	73	4064	2732	2240
83	4320	3013	2465	81	4895	2980	2440
79	4320	2905	2380	77	4895	2850	2335
75	4320	2762	2260	73	4895	2715	2225

NOTE: Maximum loads listed should be used with caution.

.375 H & H MAGNUM, 285 Grain Speer Bullet — Cat. No. 3755-285-SS-SP

GRAINS	POWDER NUMBER	MUZZLE VELOCITY	200 YARD VELOCITY	GRAINS	POWDER NUMBER	MUZZLE VELOCITY	200 YARD VELOCITY
86	4831	2502	2140	71	4064	2570	2200
82	4831	2403	2055	69	4064	2518	2150
78	4831	2315	1980	67	4064	2427	2075
86	4350	2754	2355	76	4895	2697	2305
84	4350	2633	2252	73	4895	2630	2250
80	4350	2528	2160	70	4895	2522	2155
75	4320	2662	2275				
71	4320	2518	2150				
67	4320	2370	2025				

NOTE: Maximum loads listed should be used with caution.

LOADING NOTES

CARTRIDGE	BULLET	CASE	CHARGE	POWDER	PRIMER	VELOCITY	SOURCE	REMARKS

LOADING NOTES

CARTRIDGE	BULLET	CASE	CHARGE	POWDER	PRIMER	VELOCITY	SOURCE	REMARKS

LOADING NOTES

CARTRIDGE	BULLET	CASE	CHARGE	POWDER	PRIMER	VELOCITY	SOURCE	REMARKS

LOADING NOTES

CARTRIDGE	BULLET	CASE	CHARGE	POWDER	PRIMER	VELOCITY	SOURCE	REMARKS

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